

Educating for the future

Proceeding of the ATEE 38th Annual Conference, Halden 2013

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Published in 2014 by Association for Teacher Education in Europe, ATEE aisbl,
Rue de la Presse 4, B-1000 Brussels, Belgium

ISBN: 9789081563970

Introduction – in honour of Edgar Morin

The 38th ATEE Annual Conference hosted by the University College of Østfold, Halden Norway was focused on 'Educating for the Future'. In one way a tautology, what else to educate for? All education is for the Future or is it? The theme was a result of me accidentally reading Edgar Morin "Seven complex lessons of Educating for the Future"

If the theme should have any meaning we have to answer what future or what do we know about the future. In his book "Black Swan" Nassim Taleb claim that we most of the time see the future as a linear projection of today, which most certainly it is not. The future is full of unexpected surprises or as he call it "Black Swans".

In my work as a dean I quite often was challenged by the thought of delivering education to students that will be teachers in the society 30-40 years from now, teaching pupils that should live in societies 100 years from now. How is it possible to prepare people for a task like that?

In other words how do we educate for a future we know little or nothing about? My answer is that we cannot educate for an unknown future. What we can however, is to educate based on an analysis of today's societies.

Edgar Morin raises seven basic challenges that humankind has to find solutions for or, in his opinion, there will no Future for us.

First of all we need to detect error and illusion. Even though the purpose of education is to transmit knowledge, education is often blind to the realities of human knowledge, its systems, infirmities, difficulties, and its propensity to error and illusion. Often education does not bother to teach what knowledge is.

Second we have to identify principles of pertinent knowledge. The predominance of fragmented learning divided up in disciplines often makes us unable to connect parts and wholes; it should be replaced by learning that can grasp subjects within their context, their complex, their totality.

Thirdly we have to teach the human condition. Humans are physical, biological, psychological, cultural, social and historical beings. This complex unity of human nature has been so thoroughly disintegrated by education divided into disciplines that we can no longer learn what human being means. This awareness should be restored so that every person, wherever he might be, can become aware of both his complex identity and his shared identity, with all other human beings.

Fourth we have to restore earth identity because the future of the human genre is now situated on a planetary scale. Instead of being neglected by education it should be a major

subject. The complex configuration of planetary crisis should be elucidated to show all human beings that they face the same life and death problems and share the same fate.

Fifth, education has to confront uncertainties. We should teach strategic principles for dealing with chance, the unexpected and uncertain and ways of modify these strategies in response to continuing acquisition of new information. We should learn to navigate on a sea of uncertainties, sailing in and around islands of certainty.

Sixth, we have to learn to understand each other. Understanding is both a means and an end to human communication. Mutual understanding among human beings, whether near or far, is henceforth a vital necessity to carry human relations past the barbarian stage of misunderstanding.

And last we have to teach ethics for the human genre. Education should lead to an anthropo-ethics through recognition of the ternary quality of human condition: a human being is an individual -(in)- society- (member of)- species. In this sense ethics requires control of society by the individual and control of the individual by society; in other words; democracy.

Edgar Morin talked about education as such. The question is therefor in what way these challenges are relevant for teacher education and if the situation is like this, do education matter or more recisely in what way does education matter?

Ultimately it all depends on education making any difference. We have to believe that education has been part of shaping our societies up till now and that it still is a main force in shaping the future.

Statistics

It was registered more than 200 papers for presentation at the conference. Due to different circumstances only about 150 were actually presented at the conference.

Of these, 34 papers were received for publishing as proceedings of which 27 were approved. These 27 papers represented 46 authors from 12 different countries.

Thematically these papers represented 11 of ATEEs 14 RDCs:

- Culture, quality of life and citizenship(3)
- Curricula in teacher education (1)
- Education for social justice, equity and diversity (1)
- Global education (3)
- In-service learning and the development of practice (4)
- Primary and pre-primary education (2)
- Professional development of teachers (5)

- Research observatory (1)
- Secondary teacher education (2)
- Science and Mathematics education (3)
- Teacher education and information technology (2)

Eystein Arntzen

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Culture, quality of life and citizenship

Young People's Search for Mental Wholeness. How can teacher education prepare coming teachers to meet such needs?

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Introduction

In this paper I draw attention to human spirituality. I define 'spirituality' as a symbolic life world manifested in mental and physical expressions related to what we regard as *holy* or *sacred*. In standard Western culture today, we lack a language for what we keep sacred. This does not mean that people do not have spiritual experiences. The problem is that the lack of communication about phenomena we perceive as sacred can make us uncertain and insecure with regard to our own needs and experiences in this area. Western mainstream everyday culture need to make up for this lack of a language that can help us go beneath the surface of spiritual experiences. Educators of young people should consider how to make up for this dilemma.

The background for the paper is research I have been doing during several years. I have studied two different movements supported by relatively young people over the last few decades – as psychosocial and spiritual phenomena¹. These phenomena can be understood as compensatory solutions to experienced dilemmas that are related to the lack of expressions and traditions of the sacred in mainstream culture and, not least, in education. Both movements can be characterised by the participants' search for ways of life that are downplayed or set aside in general mainstream culture. They may perhaps be described according to Fromm's concept of a special mode of existence, the *mode of being* (Fromm, 1978). Unlike the *having mode*, which denotes a relationship to knowledge and faith as properties and possessions that offer certainty because they are generally accepted, the *being mode* is an inner orientation, an attitude. This orientation may also offer certainty, but this certainty is based on one's own experiences and through critical, active striving to approach the truth (Fromm, 1978, pp. 41-43).

A prevailing theme for participants of the movements mentioned (see note 1) is a conscious attention to areas of human existence that are seldom taken into consideration in science. Neither pedagogy, which is my own professional field, nor psychology and sociology in general are concerned with such matters; these matters seem to be relegated

¹ Especially the role-playing movement, represented by the genre of play called *Dungeons and Dragons*, and the pagan movement called *Wicca* are the empirical basis for my reflections in this paper. These do not seem to be passing trends. Informal affiliation with these movements is common on such a large scale that it is impossible to determine the number of participants or the degree of participation

to theology and possibly to certain subfields of anthropology. The areas I have in mind are connected to myths, fairy tales, metaphors, and last, but certainly not least, the spiritual content that is communicated in different symbolic languages. Concepts like 'spirit' and 'soul' are practically absent in the language of social science - maybe their presence is not very obvious in the sciences of art, philosophy, religion, and the like, either.²

I would like this paper to be interpreted as a proposal to start talking about the spiritual elements of life. Especially in the human and social sciences, we need to do this, since widespread psychological and social phenomena seem to be strongly attached to some kinds of spirituality. In trying to understand these phenomena, I will use three terms that in Ancient Greek represent different conceptualised aspects of 'the word' - *logos*, *epos* and *mythos*. Shortly, *logos* is the term for the reasoning word, *epos* is the term for narratives, the spoken word, while *mythos* is the term for the effect of the words and symbols, the energetic and creative word. I will return to these terms later, and then delve more deeply into their meanings and my reasons for using them.

Towards a spiritual language

The movements I have referred shortly to above (see note 1) are clearly different, but despite all of these differences, they share some essential characteristics. One aspect they have in common is the *symbolic elements*. Symbolic elements preoccupy and influence the universe of participants of both movements. They find new expressions of old symbols and myths. Participants are consciously seeking to find their own ways to experience and consider symbols of wholeness. This is expressed in their belief in humans' connection with the nature that surrounds them. Forms of symbolism reappear in the play and life.

In both movements, the practitioners study texts with mythical content.³ Another common feature is the *therapeutic aspect* of their activity. In both movements' notions and imaginations, we also find forms of *animism*, the understanding that everything in nature, including what we most commonly regard as lifeless, like water and stone, has its own form of life energy. Consequently *magic* can be performed as a form of life energy. Furthermore, *the fight between good and harm* is essential. Often, mental force is regarded as more fruitful than physical force.

² Carl Gustav Jung went as far as to say in *Approaching the unconscious* that "...the general underestimation of the human soul is so great that neither the great religions, nor the philosophies, nor scientific rationalism have been willing to look at it twice" (Jung, 1964, p. 93).

³ Here this is defined according to Eliade's concept of 'myth': "*conceptions of the world*" which is close to the Jungian understanding of the mythological.

Essential common features of the two movements - whether these features are played or lived out - are the sense of connection between humans and nature, and the holistic approach to mind and material, expressed by symbols, metaphors, and myths.

Analytical Perspectives

In Western societies today, most people are acquainted with the concept of *logic*, and they are also aware that its linguistic root is found in the Ancient Greek *logos*, generally translated as 'the Word' (e.g., the introduction to gospel of John). The terms *epos* and *mythos*, however, are also terms for 'word.' The three terms, however, conceptualise different aspects of 'word,' and I claim that in interpreting and analysing the social phenomena I have described above, we need all three aspects.

In Western social science, we are used to logical perspectives that take as their starting points reasoning within fixed frames or conditions. These conditions are determined by a set of concepts agreed upon within our established "logies," e.g., socio-logy, anthropology, psycho-logy and above all the philosophy of logic that pervades science, even in qualitative approaches. These concepts are all parts of a discourse, an established community of thought and communication that may be called socio-logic, anthropo-logic and psycho-logic. Embedded within all of these logic-ships are limitations of concepts, analytical delimitations, and distinctions of central interest. I find, however, that none of these established "logies" gives sufficient room for elucidating spiritual movements philosophically.

The central matters in the movements referred to are stories and myths. Stories and myths are, so to speak, the world of both movements. Worlds like these deserve to be considered through concepts that belong to such worlds. Since I find that the traditional logic is insufficient to conceptualise them, I will try to supplement traditional logic with an *epic* and *mythic* approach. By sticking to accepted norms of argumentation, I will try to combine these three perspectives.

An *epic* perspective has as its starting point narration, oral traditions, retold stories, and new ones. This perspective opens up a space for narratives as expressions of wisdom and creativity that connect what is considered an inner world with the exterior one. *Epos* is seen as a source of attending to sensed experiences, even in the process of imparting. A story may bring forth elements from the song of the muses - elements that may be perceived as mere noise if considered through logic. While written analytic language may be located outside sensed experiences and is clearly like an abstraction in this way, stories give a foundation for perception and sensation that is quite different from analytic language in general. The narrative perspective opens the space and gives access to what may be unfinished and incomplete, for contexts at which we have yet to arrive, but that may be to come.

A *mythic* perspective in this context means to take as a starting point the stories about the great, essential, and existential relations of life, about areas we conceive of as holy, about concepts of areas that are behind or beyond spoken or written words. The mythic perspective may also be concerned with the fundamental needs for a sense of security and freedom from pain, and with asking, prayers, and incantations, and with spiritual experiences. The epic and the mythic perspectives are, to a certain degree, highly intertwined.

In the following, I will present understandings of phenomena related to Western thoughts in general. My arguments may not necessarily be proven, but I find support from Carl G. Jung. Jung claimed that there are strong empirical reasons for us to cultivate thoughts that can never be proven, namely because they are known to be useful, in the sense that they can generate understanding.⁴

In my steps to analyse what I understand as some kind of spiritual seeking, in the following discussion, I will lean on different scholars of what I prefer to call epistemology,⁵ particularly the theorist of communication and mental processes Gregory Bateson.

The Reason of the Heart

Gregory Bateson emphasised the need for developing alternative concepts of rationality. He was conceptualising what he called *the reason of the heart*. The expression is picked from the famous paradoxical sentence by the philosopher Blaise Pascal⁶: “The heart has its reasons which the reason does not at all perceive” (Bateson, 1972, p. 139). By claiming that the heart has its own reason, or rationality, Bateson was indicating that what he here calls the heart has its own way of thinking, its own rules. Bateson claimed that for the whole biological world, some special regularity is valid or applicable; it is these regularities that he calls the reason of the heart. According to Bateson, the reason of the heart covers all living creatures’ ways of thinking, acting, and decisions. This is the case with the preverbal and the unconscious, or the primary thought processes, as we know it from our dreams, hallucinations, and similar experiences, and from poetry and art (Bateson, 1972,

⁴ Discussed in *The Soul of man* in the article “Approaching the unconscious” (Jung, 1964, p. 72-81).

⁵ Defined as the study of knowledge, it is concerned with following questions: “What are the necessary and sufficient conditions of knowledge? What are its sources? What is its structure, and what are its limits?”

(Stanford *Encyclopedia of Philosophy*). Retrieved from <http://plato.stanford.edu/entries/epistemology>

(Accessed 22 November 2007).

⁶ On that matter, Pascal was the arch-rival of the philosopher Descartes (*Cogito ergo sum*).

p. 172). In his last works, Bateson further developed his thoughts regarding the reason of the heart. He contributed here to some new “steps” (Bateson, 2002, p. 193; Bateson & Bateson, 2005)⁷ towards a theory about the semantics and syntax of the preverbal thinking, *what* this thinking deals with, and *how* we put signs together in ways that form a meaningful, coherent context. With regard to the semantics and syntax, Bateson points out that the reason of the heart always deals with *relations*, never with things - in other words, with I-you, but never with I-it relations.

Furthermore, Bateson outlined four conditions that characterise preverbal thinking. First, there is no time; second, there is no “no” or “not”; third, there is a difference between the name and the denominated; and, finally, metaphors are used. Metaphors work through their analogies. Nature itself uses analogies.

However, Western ways of thinking have taken a particular direction with specific characteristics, which Bateson called the Western Hubris (1972, p. 498). *Hubris* can be defined as arrogance and overconfidence of a nearly violent character. Bateson defined the Western Hubris as two tendencies in thinking and experiencing that interfere internally with each other. One tendency is to think in a determined and business-like fashion; the other tendency is to think in opposites and polarities. This definition implies that we think more or less like the following: A leads us to B, which forms the basis for C, which leads to D, which is the condition for ... and so forth. The problem of this type of thinking is that on the way, or in steps of the progress, we may experience unintended consequences, because thinking in parts implies that it is impossible to have an overview. The other tendency implies that we think of humans contra animals, us contra others, men contra women, body contra mind, and so on. With a mentality like this, Bateson claims, one believes that a single entity can stand out from the entirety and control it. In Western societies, these ways of thinking are like courses we nearly automatically follow, to such a degree that the ways of thinking even includes our emotions and behaviour, which follow the same courses (Bateson, 2002).⁸

Differently, the ecological view implies that the mental and the material are connected in such a way that the mental is immanent in the material. In this connection, it is important to emphasise how this view must influence our understanding of communication. Concretely, the mental must have some channels for communication. The mental is not,

⁷ See, for example, the text “The world of mental processes” (Bateson & Bateson, 2005, p. 16).

⁸ The concluding dialogue “So what?” and the appendix “Time is out of joint” (Bateson & Bateson, 2005, p. 193, 2003) are interesting summaries of the theme.

however, exclusively located in the brain, but comes into existence when we communicate, and is both interpersonal and transpersonal (Bateson, 2002, p. 85).

Our current and prevailing mentality involves the pollution of both nature and mind. The conclusion that follows from the ecological theory of mind and nature is that we must learn new ways of conceiving and thinking, become open to a different mentality. Another mentality implies a new sense of *circular and recurrent processes*, and a sense of the part-whole-relation. These ways of thinking can rightfully be called a natural mentality because they are nature's own mentality (Bateson, 2002, p. 96).⁹

This search for the reason of the heart, or the understanding of the natural mind, the natural way of thinking, led to an attempt to formulate a new science, which Bateson and some of his colleagues in cybernetics called epistemology, in other words, a new theory of knowledge and understanding. Art and religion may be bridges over the current gap between preverbal thinking - or the reason of the heart - and conscious thought. There is a need for alternative concepts of rationality. Maybe in the future we will be more fully able to be preoccupied with understanding forms of perceiving and thinking that include both logic, epic, and mythic aspects of relations and communication?

Erich Fromm (1978) went so far as to say that "the physical survival of the human race depends on a radical *change of the human heart*" (p. 10). He pointed to the connection between such a change and living in the *mode of being*. In an interview, he also once mentioned that "to reach the mode of being man needs religion" (Fromm, 1977). In the following, I will focus on religion.

Respect or Neglect

In the following account, I have been inspired by etymology, i.e., the theory of the origin and derivation of words and their meanings. The word *religion* is derived from the Latin verb *religere*, which means 'to consider intimately,' or 'to pay careful attention to something.' It is the same verb in negative form that we find in the verb we often use to refer to a situation to which we are utterly indifferent, when we neglect something, namely, Latin *negligere*. From the verb's positive form, the noun *religio* is derived. This noun is known to have a threefold meaning. First, it means the conditions or phenomena that are regarded as sacred or holy, and therefore ought not to be neglected, but carefully considered. Second, it refers to the attitude that implies that one considers the sacred

⁹ These are already central themes in *Steps to an ecology of mind*; see, for example, the Metalogue (Bateson, 1972, p. 38). They are also found most recently in *Angels fear*; see, for example, the metalogues "It's not here" and "So what's a meta for?" (Bateson & Bateson, 2005, p. 145, 183).

carefully and the commitment it requires. Third, it means the binding of words and acts that originate from such a commitment.

To indicate that something is holy is a quality statement regarding what humans are especially connected to and consequently dependent upon. We may see an etymological relationship between the word *holy* and other words, like *hole*, *hollow*, *hall*, *halo*, *hale*, *halcyon*, and *helio* - words that may be connected to safety, health, soundness, light, consecration, peace, happiness, and community. Cult and rituals in primary communities always had, according to historians, a two-sided function: a defence function and an integrating one. The former was meant to prevent evil or insecurity, the latter to sustain safety.¹⁰ Simultaneously, rites deal with fundamental questions of life, fertility, and death, which are the same themes found in the myths. We see, for example, in all forms of *rites de passage* a scheme of three parts: separation, isolation, and restoration. This scheme is cyclic in relation to the basic concepts of birth/rebirth, life, and death. The cycle of nature corresponds to the cycle of human life (Eliade, 1995).

Among all known myths, genesis myths seem to be the most basic (Eliade, 1995). These are called cosmogonic, derived from the Greek *gone*, which means 'creation,' and *cosmos*, which refers to the inhabitable world. The myths describe how holy powers, represented primarily by the Great Mother in different forms, made life possible, and how these powers, together with the mothers and fathers, laid the ground for satisfactory social life. These themes may vary from place to place and from time to time, repeated in rites of the year. In this way, we see how macro-cosmos are continuously confirmed and verified in the micro-cosmos.

The mythical narratives offer reasons for the cults and rites. Scholar of history of religion Mircea Eliade said that the essential function of these myths is to reveal exemplary models for all human rituals and all essential human activity - "parliament or marriage, work or education, art or wisdom" (Eliade, 1975 (1963), p. 8). The myths contain a power that gives power; they offer knowledge about the connections that are experienced through ritual retelling and by performing the rituals that the myths are a part of. The cult is, in this respect, a creative co-contributor, on a micro-level.

The cult was connected to the seasons of the year, to times and days "where the myths rule," consequently, *holy time*, recognised in the word *holyday* (Eliade, 1995, p. xi). Through puberty rites, young people experienced in their own bodies the development of life and society. They learnt to sense.

¹⁰ See, for example, "Introduction" (Eliade, 1995, p. ix-xv).

In the myths, we find a realisation of basic biological patterns, birth, life and death, which have both an individual aspect and a social aspect. The myths were often sung or chanted, accompanying the cult. They were bridge-builders between the present and the future. In other words, they actualised the past, determined the present, and invoked the future. The cult can be said to be culture's root, in a dual sense. When old cult traditions change or disappear, we see that elements of the cult, which include myths, may go on living on their own, that old cults can be carried on guided by new myths (Pollan, 1992)¹¹.

Even in science, we find traces of myths in expressions that refer to genesis and creation, when we e.g., talk about a *pregnant* theory or a *fruitful* perspective. Dance, drama, and music have developed from different elements of the cult, philosophy and science from the myths speaking about the world, everything, and everyone's origin and essence. Thus, the creative and powerful language of the myths may be the mother of poetry and literature. When, however, myths are mistaken for mere fantasy, we may ask whether such a situation is evidence of people having lost the connections to life that the myths presuppose.

As a psychoanalyst, C. G. Jung was preoccupied with the human psyche as part of nature and with its unlimited mysteriousness. Due to this, he claimed, we are not able to define the psyche or nature. Moreover, he pointed out that myths and symbols are of vital significance; to be able to see phenomena in their right perspective, we need to understand both the human past and present. He also claimed that myths, consisting of symbols, have not been devised consciously; they have just happened (Jung, 1964, p. 70). In this respect, I find that Bateson, in his understanding of the rules for pre- and nonverbal thinking (Bateson, 1972, p. 177), is in line with Jung.

The Need for Mental Wholeness

To understand Jung's way of thinking, it is important to understand his concept of archetypes, which he compares with the instincts. Like the instincts, he says, the collective patterns of thought in the human mentality are *innate and inherited*, something we are

¹¹ We find an example of how an old cult may be carried on guided by new myths in the Roman-Catholic mass. Here, the priest acts as an executer of the holy sacrament of the altar, which provides the flesh and blood of Jesus by means of the words of inauguration, then afterwards re-sacrifices him on the cross to give the congregation a new life. This ceremony may indeed show that the Catholic Church's mass and rituals, in a concrete way, take care of the understanding that the mental, here the sacred, is immanent in the material.

born with as a heritage. These forms of thought function, when the opportunities are present, are more or less alike in all of us (Jung, 1964, p. 26). These forms or patterns are not static, but dynamic factors in psychic processes. The consciousness is just a part of the psyche. Jung spent his entire life working to understand the unconscious processes. In his and his successors' theories, the psychic as a relatively self-regulating system is a basic understanding. We see that their theories have many traits in common with the cybernetics. Mental processes are understood as self-corrective life processes.

To be able to understand the unconscious, it is important to have knowledge of archetypes in myths and art. However, it is not enough, as Jung emphasises, to know the name of the archetype. The name means little, but how the archetype or symbolism is connected to the individual is most important. Interpretation of the meaning of an archetypal pattern has for individuals can be understood only in connection with an interpretation of the meaning it has in their own individual life processes (Jung, 1964, p. 83). With regard to this understanding, we may find a kind of analogy in Wittgenstein's philosophy of language, namely, the understanding that we cannot understand language without understanding its context (Heaton & Groves, 1994). Similarly, nor can we understand archetypes except in the context of individuals.

Above, I have given symbolism and myths as universal narratives a central place in the understanding of human processes of life. They are also patterns of understanding life, including mental processes. Metaphors and archetypal symbols can be sources of seeing connections that traditional scientific logics do not enable us to see. For example, how can we possibly understand concepts like empathy - the ability to be sensitive to others - within the area of those logics? I find it difficult. In mythical symbolism, on the other hand, we may find sources of understanding of common experiences that affect us, but are difficult to express in languages other than the mythical and that of the muses, the language of metaphors and analogies. Metaphors are sources of insight that may strengthen our sensitivity to others' lives. In using our own lives as analogies for others' lives, we open up possibilities for understanding one another or other things. Bateson (2005) understood even love in a cybernetic way. Loving another person means to understand oneself and the other as systems, and consequently, to understand both of us as a gathered, greater system. In moving into the areas of love, we move into areas where even angels move with caution (p. 195).

Mainstream cultural dilemmas

Many people today are experiencing a crisis of meaning. I claim that one reason for this situation is that in Western culture, the understanding of life has been trivialised, which can be connected to a vulgarising process of our language, exposed as it has been to a positivistic rationality over the last several centuries. This means that we have been deprived of a language that enables us to communicate the deepest truths and the most

fundamental responsibilities. However, as Michael Ende (1983) told us, there are people who never arrive in the land *Fantasia*, and there are those who can go there, but remain there forever. But there are also people who go there and turn back again, and these are the people who make both worlds healthy. This means that vital sources of knowledge have been drained in a culture where mythical narratives have been trivialised or erased.

Words that Emerge...

Aided by thoughts conveyed by scholars of different areas, such as history of religion, analytical psychology, cybernetics, and epistemology, I have tried to allow some spiritual experiences to be heard. My hope is that this attempt can be a step towards an awakening of an understanding of human spiritual needs. Such needs should be cared for. In social science, a logic perspective associated with unbiased rationality would benefit from interaction with epos and mythos in reflecting upon different aspects of human life.

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‘Soft’ Subjects and Hard Facts: The Case for the Caring Curriculum.

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Abstract: In an educational context where ‘STEM’ (Science, Technology, Engineering and Mathematics) has become a dominant feature of discourse, the status of what may be perceived as the ‘softer’ subjects has been called into question. In Ireland, Social, Personal and Health Education (SPHE) constantly competes with the ‘harder’ subjects such as Science and Mathematics. This paper will explore the status of SPHE in Ireland using current literature and the results of a research study undertaken with a group of pre-service primary-school teachers. Informed by the Theory of Planned Behaviour (TPB) (Ajzen 1991; Fishbein and Ajzen 2010), this study explored the students’ attitudes to, and experiences of, SPHE, prior to commencing their studies. It follows on from a previous study undertaken with pre-service post-primary teachers (Mannix McNamara et al. 2012). The research methodology comprises a mixed-methods approach, incorporating a written survey of students along with a focus group interview. The results of the study indicate that, despite the increasing number of crisis situations which confront young people, SPHE and associated subjects are still subordinate to the other ‘harder’ STEM subjects.

Key Words: SPHE, status, TPB, attitudes, experiences

Introduction

Social, Personal and Health Education (SPHE) was introduced into Irish Primary Schools in 1999 and into Irish Post-Primary Schools in 2000. It was seen as a significant innovation in Irish education as its advent coincided with social, economic, demographic and cultural changes occurring in Irish society at that time. While many of the issues relating to SPHE were previously addressed in schools, very often this was in an incidental and unstructured manner and as a reaction to a particular incident or event. There was no core programme or curriculum for health education. In the 1980s and 1990s, increased attention was being accorded to health promotion with the focus on a proactive rather than a reactive approach to health. The settings based approach to health promotion was introduced at the first international conference on health promotion organised by the World Health Organisation in Ottawa in 1986. Since then the spotlight has been placed on the role of schools in the promotion of healthy habits and lifestyles. The WHO views school health programmes as a strategic means of preventing important health risks among young people and of engaging the education sector in efforts to change the educational, social, economic and political conditions affecting risk (WHO 2013). Yet, despite the efforts of the WHO and the international focus accorded to health education and health promotion, it would seem that SPHE remains subordinate to other curricular areas, although there are hard facts in relation to the health and wellbeing of

children and young people that provide a strong rationale for SPHE to occupy a more central role in schools.

Rationale

A key concern in relation to the health of young people in Ireland relates to substance use and, in particular, alcohol. While the 2011 report from the European School Project on Alcohol and other Drugs (ESPAD) indicates a downward trend in rates for smoking, alcohol consumption and use of other substances among young people in Ireland, we cannot be complacent. Fifty per cent of young people aged 16 and under are presented as having consumed alcohol in the previous 30 days (Hibell et al. 2012). The My World survey, a study of Youth Mental Health in Ireland, demonstrates significant links between alcohol consumption and mental health problems in young people (Dooley and Fitzgerald 2012). Bullying and in particular cyberbullying is another significant threat to mental health among young people. O'Neill and Dinh (2013), report that 23% of 9-16 year olds in Ireland have experienced bullying, either online or offline. Young people are very aware of the importance of positive mental and emotional health as evidenced in the research of O'Higgins et al (2007) and Roe (2010). In relation to the sexual health of young people, Mayock, Kitching and Morgan (2007) indicate that the age of first sexual encounters has dropped and this brings a number of attendant problems. Research indicates that young people are more likely to engage in risky sexual behaviour (Layte et al. 2006) and that early sexual behaviour can generate feelings of regret and distress (UNICEF 2011). Teenage pregnancy also carries increased risk to both mother and baby including high blood pressure, obstetric complications and low birth weight (Fullerton 2004). The physical health of children in Ireland is also a cause of concern according to the *Growing Up in Ireland* (GUI) study which indicates that 26% of 9-year old children in Ireland have a raised BMI. Of these 19% are defined as overweight and 7% as obese (Layte and McCrory 2011).

These facts are familiar to the Irish population and are likely to resonate internationally also. It is when they become acute that the role of the school and the curriculum is placed under particular scrutiny, with SPHE being accorded specific focus. However, the focus generally tends to be temporary with SPHE being viewed mainly as a 'soft' subject in comparison with other curricular areas.

Status of SPHE

There are a number of possible reasons as to why SPHE may be viewed as a 'soft' subject. In recent years, there has been an increased focus on Literacy and Numeracy in the Irish curriculum and this has tended to compromise the status of SPHE. In addition, there is very little formal time allocated to SPHE: 30 minutes per week of discrete time allocated at primary level and one class of approximately 45 minutes per week at post-primary level up to third year. This formal time is viewed as a starting point for SPHE with an expectation that the health messages are integrated into other curricular areas and into

the informal aspects of the school day also. However, in practice, the primary focus remains on the classroom subject rather than on a broader context and on the ethos of the healthy school environment (Mannix McNamara et al., 2012). In addition, the fact that there is no formal curriculum for SPHE for Senior Level in the post-primary school, allied to an arbitrary approach to implementation, further compromises the status and visibility of the subject. SPHE is not an examination subject and thus is constantly competing with subjects that are examined and generally losing out in the struggle. Research shows that the provision of SPHE decreases proportionally to the proximity of examinations (Geary and Mannix McNamara 2003; NicGabhainn, O'Higgins and Barry 2010). Teacher confidence in addressing some of the more sensitive areas of SPHE such as Relationships and Sexuality Education (RSE) tends to vary and this affects status and implementation (DES 2009; Roe 2010; NicGabhainn, O'Higgins and Barry 2010). Also, at post-primary level there are issues relating to teacher capacity in this area with many teachers providing SPHE as an addition to their 'main' subjects. It is not mandatory in Ireland for post-primary teachers to have a defined qualification in SPHE. (At primary level, this situation does not prevail as SPHE is a designated part of the Bachelor of Education programme). All of these issues compromise the status of SPHE with the result that many teachers avoid teaching SPHE for this reason (Burtenshaw 2003).

The problems associated with the status and implementation of SPHE is not confined to the Irish context. In France studies have found that schools tended to set a low priority on Health Education and school participation in health promotion initiatives does not mean that all teachers will sign up to it (Jourdan et al. 2011). Therefore implementation becomes problematic. Paulus (2005) states that current debate in Germany in relation to policy and pedagogy in reforming and improving schools are notably lacking in references to health promotion. However, Paulus argues that the overall target of health promoting schools is the improvement of educational quality. He concluded that health should not be seen as an additional theme that schools have to deal with. In the United States the Social Health Policies and Programs Study (SHPPS) demonstrated that while positive changes in relation to health education were identified at state and district level, this did not necessarily translate into implementation (Kann, Brener, and Wechsler 2007). Samdal (1999) observed that of the Core Curriculum in Norway, a significant feature that relates to Health Promotion is the choices that the school and the students make. She also observed that concrete action was regarded as being difficult to initiate. The issue of choice of the school is borne out by more recent research undertaken by Tjomsland et al. (2009). They observe that the development of healthy policies and practices seems to depend primarily on the principals' and teachers' motivation and the perceived need for such practices in schools.

The research project presented in this paper examines the impact of varied implementation of SPHE at primary and post-primary levels on the attitudes and

experiences of incoming pre-service primary school teachers. This project is a continuation and development of a project undertaken by Mannix McNamara et al. with pre-service post-primary teachers in 2010 and published in 2012.

Theoretical Framework which informed the Research

The Theory of Planned Behaviour (TPB) (Ajzen 1991, Fishbein and Ajzen 2010) (Figure 1) informed the design of this project. This framework also underpinned the preceding research by Mannix McNamara et al. (2012). This theory has emerged as one of the most popular frameworks for understanding the relationships of beliefs, attitudes, social norms and perceived behavioural control with intention to perform behaviour. This is important as a generally favourable disposition towards a situation does not suffice as a predictor of behaviour (Ajzen 1991). In the case of SPHE, it is unlikely that the importance of addressing child health issues will encounter a dissenting voice, but this does not necessarily translate into implementation. NicGabhainn, O'Higgins and Barry (2010) observe that for curriculum change to be successfully established, more is required than mandatory statements of intention. The TPB demonstrates the complex relationships between intent and behaviour. It is thought that the more favourable the attitude and subjective norm, and the greater the perceived control, the stronger the intention to perform a specific behaviour, in the current context, the teaching of SPHE. There is empirical support for the use of the TPB in understanding, predicting and changing a variety of social, health and lifestyle behaviours (Fishbein and Ajzen 2010) There is also an increasing evidence base supporting its use in predicting professional behaviour of health professionals and teachers, including student teachers (Smarkola 2008; Côté et al. 2012, Mannix McNamara et al. 2012).

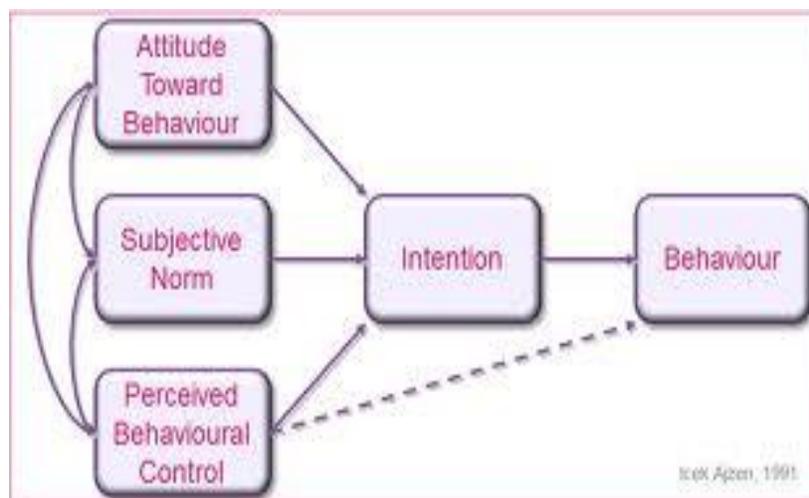


Figure 1: Theory of Planned Behaviour (Ajzen 1991)

Methodology

The study used a mixed-methods approach incorporating a questionnaire and a focus group interview with students. It was approved by the Mary Immaculate College Research Ethics Committee (MIREC) and was undertaken in September/October 2012. The questionnaire followed that of the previous study and thus consisted of similar, though not identical questions. The first two questions related to general details (gender and age). Questions three and four related to the students' understanding of the acronym SPHE and their previous experience of the area. Question five was presented as a series of statements, with the respondents asked to respond using a Likert scale. A qualitative dimension was incorporated here, with space being provided for respondents to elaborate on their answers. Question six required the students to rank the areas taught in SPHE at post-primary level according to importance. Question seven asked if all the areas were addressed in the students' experiences of SPHE and a space was provided to outline the areas not addressed. Question eight asked the students if they had recommendations for the future development of SPHE. This question required a wholly qualitative response. Question nine asked the students to rate their overall experience of SPHE to date using a Likert scale, again with space provided to qualify the response. Question ten invited the students to provide additional comments.

The questionnaire was piloted among 20 first year Bachelor of Education (B.Ed) students who did not take part in the study. These students were asked to respond to questions relating to the length of the survey, clarity of the instructions, clarity of the questions and sequencing of the questions. The pilot phase indicated ambiguity in Question six where students were asked to rank the various SPHE areas in terms of importance. While the wording of this question was amended, twenty-five respondents still misinterpreted it in the actual study and their responses had to be disregarded. The survey was administered to 200 1st year B.Ed students in class on September 10th 2012. These students had not yet experienced SPHE or related areas at college level.

Survey Findings

A total of 165 students completed the survey. Some students were not over the age of 18 years and would have required parental permission to participate. Other declined the invitation to participate. Of the respondents 74% were female and 26% were male. Ninety per cent of the respondents were aged 18-19 years with the remainder aged 20 years or over. Both the gender and age profiles mirror those of the typical 1st year B.Ed cohort.

Just over half of the respondents (52%) indicated that they had experience of SPHE at both primary and post-primary levels, 39% indicated that they had experience of SPHE at post-primary levels only, with 4% indicating that they had experience at primary level only. Only 5% indicated that they had not had any previous experience of SPHE. There were no significant differences in findings for gender, however, the 18-19 year olds were more likely to report that they had some experience of SPHE at primary and/or post primary

levels compared to those aged 20 and over (chi-square 77.795, $p < 0.000$). (See Table 1 next p.).

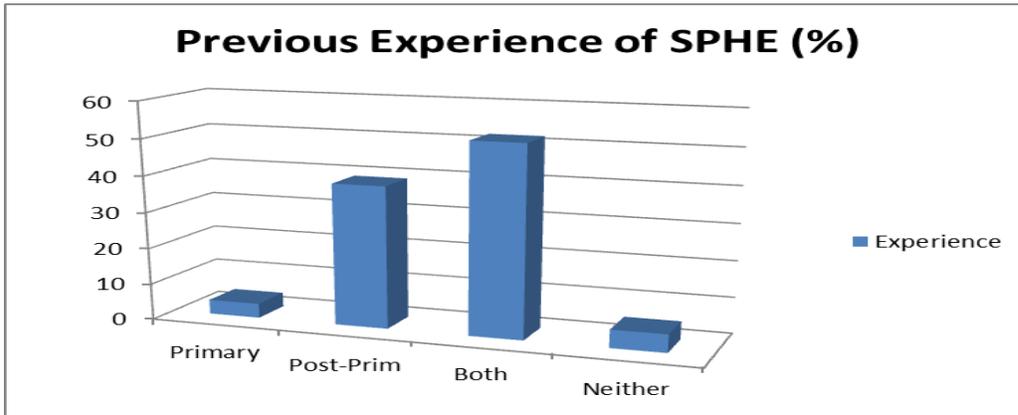


Table 1: Students' previous experience of SPHE

Students were asked to write down what the acronym SPHE meant. Forty-six per cent provided a correct answer while 54% provided an incorrect answer. There were no significant differences linked to gender or age profile. A similar profile was found in the previous research: 44:56 (Mannix McNamara et al. 2012). In relation to students' attitudes towards SPHE, participants were asked to provide their level of agreement to a number of statements. Table 2 displays the findings in this section with the most frequent response shaded. Percentages have been rounded to the nearest integer.

Statement	N	Strongly Agree (%)	Agree (%)	Unsure (%)	Disagree (%)	Strongly Disagree (%)
I am interested in SPHE	163	8	68	17	7	0
I enjoyed SPHE at school	159	13	62	12	12	0.5
I believe that SPHE is a relevant curricular area	165	24	60	13	2	0
I learned a lot from the SPHE class	161	4	34	27	30	5
SPHE was taught very well in my primary school	150	4	23	25	35	13
SPHE was taught very well in my post-primary school	159	5	43	17	29	6
There was a whole school approach to teaching SPHE in my primary school	152	2	13	31	41	13
There was a whole-school approach to teaching SPHE in my post-primary school	156	5	24	26	40	5
I believe that SPHE is beneficial for students	165	30	61	7	1	0.5
The fact that there is no exam in SPHE at post-primary level is an advantage to the subject	162	29	44	14	11	2
SPHE should be mandatory in schools to Leaving Certificate level	162	15	36	27	19	3
I look forward to teaching SPHE on leaving college	165	22	56	19	3	0

Table 2: Students' attitudes towards SPHE

There were some significant gender differences. Female students were more likely to agree that they *were interested in SPHE* (chi square= 16.453, $p < 0.000$), that they had *learnt a lot from the SPHE class* (chi square = 9.370, $p < 0.01$), that *SPHE had been taught very well in primary school* (chi square = 6.077, $p < 0.05$), that there had been a *whole school approach to SPHE in primary school* (chi square = 7.648, $p < 0.05$) that *having no exam in SPHE at post-primary level was an advantage to the subject* (chi square 9.574, $p < 0.01$), and that *SPHE should be mandatory in schools up to Leaving Certificate level* (chi square 7.543, $p < 0.05$). It should be noted that the responses to “*I learned a lot from the SPHE class*” are a little misleading and should not necessarily be construed as positive as the combination of responses for ‘strongly agreed/agreed’ and

'disagreed/strongly disagreed' are identical at 38%. There were no significant age profile differences.

Students were provided with an opportunity to comment on this answer if they so wished; six students did so. These comments are displayed in the text box:

- I think SPHE should continue until LC [Leaving Certificate] as this is the important time when people are moving away to College so they need to be as informed as they can be
- I went to an all-boys school, we were taught SPHE until JC [Junior Certificate], we only had one class a week and to be honest, both teachers and students didn't give enough attention to the subject in my opinion
- More focus on physical health
- Often teachers would only skim the RSE [Relationships and Sexuality] classes of the course while focusing on physical fitness and health
- Should be compulsory at post primary level
- Sometimes teachers find it difficult to talk about certain subjects such as sexual education as they are not confident enough themselves

Students were asked to rank ten different curricular aspects of SPHE in the order of what they perceived to be the most important (1) to least important (10). The focus was on the areas addressed at post-primary level. Of the respondents, 25 did not answer the question correctly and these were not included in the analysis (N=140). Table 3 outlines the perceived importance of the different curricular areas:

SPHE aspect	Proportion that ranked in top 3 (1,2, or 3)	Proportion that ranked in bottom 3 (8, 9 or 10)
Emotional Health	55%	15%
Belonging and Integrating	38%	29%
Physical Health	37%	22%
Personal safety	34%	26%
Relationships and Sexuality Education	31%	20%
Substance Use	25%	38%
Influences and Decisions	23%	37%
Communications skills	23%	34%
Friendship	22%	30%
Self-management: A Sense of Purpose	14%	46%

Table 3: Perceived Importance of the Different Curricular Areas

The table shows that Emotional Health was the highest ranked aspect (mirroring research by O’Higgins et al. 2007), while Self-Management: A Sense of Purpose was the lowest ranked aspect of SPHE. Interestingly this area was identified as the area that they encountered least frequently (See below). When asked if all areas had been addressed in the SPHE curriculum, 53% responded YES, while 47% responded NO. The students, who answered NO, were asked to list the areas that had not been covered; these are listed in Table 4 in order from the most frequent to the least frequent reply:

SPHE ASPECT	Frequency (N)
Self-management: A Sense of Purpose	33
Communications skills	24
Personal safety	22
Belonging and Integrating	15
Emotional Health	14
Substance Use	10
Influences and Decisions	9
Relationships and Sexuality Education	5
Friendship	5
Physical Health	5

Table 4: Aspects of SPHE not addressed in Post-primary School

The penultimate question asked respondents to rate their overall level of satisfaction with their SPHE experiences to date, with 155 responses to this question. A small proportion (8.4%) responded that it had been unsatisfactory while most rated this as satisfactory. Table 5 displays these findings:

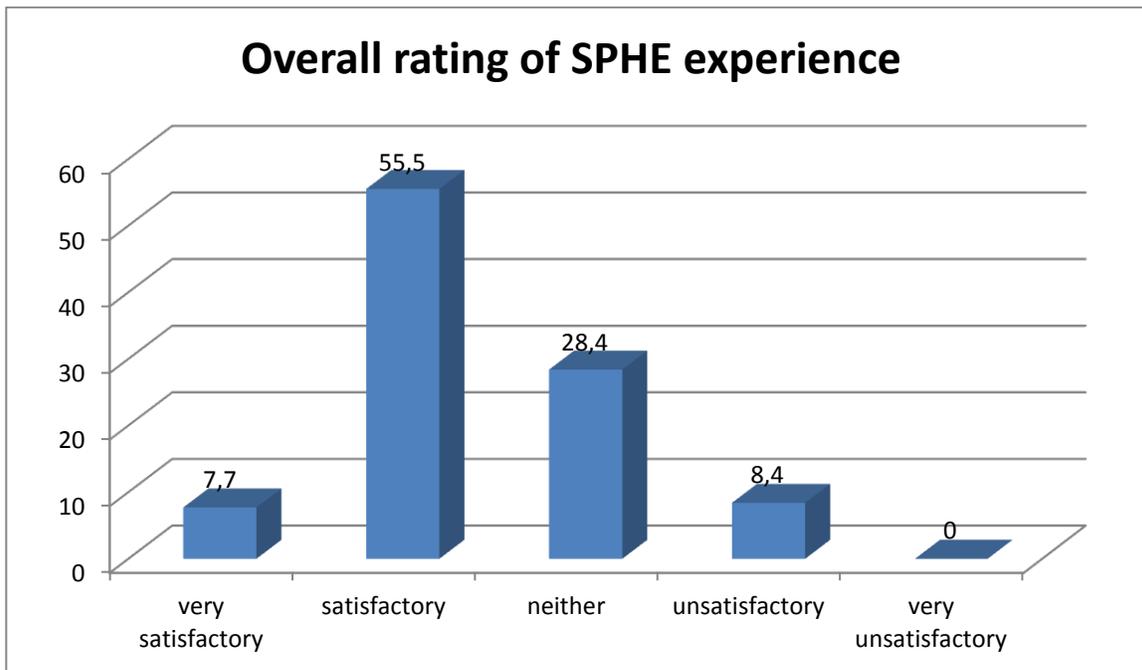


Table 5: Overall rating of SPHE experience

Twenty-nine students (18%) provided a qualitative response to this question. The comments related mainly to post-primary experiences and frequency of classes. Students acknowledged the importance of the area but in many cases commented on the lack of emphasis and visibility and insufficient time allocation.

At the end of the survey, students were asked to add comments if they wished to do so. Seventeen students (approximately 10% of the sample) did so. Four students observed that they had never experienced SPHE, with one respondent stating, *“I believe it to be an important aspect of education to create a social being. I was not fortunate enough to benefit from this when I was in school”*. Most of the other comments reiterated the themes from the other open questions.

Focus Group Findings

Five 1st Year B.Ed students participated in the focus group interview. All were female and aged 18-19 years. All reported having had some experience of SPHE in both primary and post-primary school. Interestingly, the researchers found recruitment for this aspect of the research difficult, with students reluctant to volunteer. This may be due to the impact of social norms on behavioural intent as outlined in the Theory of Planned Behaviour (Ajzen 1991).

Focus group participants were invited to provide their views on SPHE. In the main, they remembered very little from SPHE in primary school. One student stated: *“a few teachers just rushed past it...mostly we focussed on Maths and English...”* Their memories included talking about relationships, diversity of families, bullying and having a talk about Relationships and Sexuality Education (RSE). The participants recalled more memories from SPHE in post-primary school. In terms of content, they remembered covering body image, eating disorders, bullying, hygiene, relationships, RSE and drugs education. Looking back, they felt that the content of SPHE was relevant to their age at the time, but they also felt that *“a lot of it was common sense”*

While all agreed that SPHE had been on offer in 1st, 2nd and 3rd Year, four of the five students did not always have SPHE when it was scheduled. Most of the participants felt that the SPHE class was interesting, with one participant stating: *“it was kind of a nice break from the other stuff we were doing”*. In general, the participants felt that the teachers were interested in teaching SPHE. When asked what they felt was the most important aspect of SPHE, most participants stated bullying. When asked what they liked least about SPHE, the teaching and learning methodology they had experienced was brought up by the participants with most agreeing that the teaching and learning methodology had been passive: *“books and worksheets”*; *“we were just given sheets and you’d read them”* *“you don’t want to be reading the text book...you’d rather join in a conversation...”* Two participants commented on a lack of structure of the SPHE programme they had experienced; with one participant stating, *“you could be doing one thing one week and go on to the next thing the following week.”* The students were also asked to provide recommendations for SPHE and these will be included in the final section of this paper.

Participants were asked to share their feelings about teaching SPHE in primary schools, and it was evident that they had some concern about this. Three students referred to the view that they had not experienced effective teaching of SPHE themselves, which impacted on their own confidence and ability to teach. One participant stated, *“it’s going to be hard to teach SPHE when you haven’t been taught it properly yourself”* with another saying, *“you don’t really know what you’re supposed to teach...”*. Other concerns included how to address bullying, and how to keep everyone in the class interested in the topic.

Discussion

In applying the TPB to the research, it is evident that the majority of students surveyed are favourably disposed towards SPHE, with 84% indicating their belief in the relevance of SPHE, and 91% in its importance. This is reflected in national research (Roe 2010). However, responses relating to the extent of learning varied considerably, with 62% indicating either uncertainty in relation to extent of learning or disagreement that a lot was learned. This is bound to equate negatively with current and future subjective norms, as SPHE may be relegated in favour of other more quantifiable outcomes. This became more evident in the qualitative dimension of this research. The fact that SPHE is not seen

as 'cool' also impacts significantly upon subjective norms. One participant in the focus group noted that *"at the time we probably thought that you were too cool for it...you were able for something more"*. The fact that many of the students were critical of the methodology in use at post primary level, demonstrating little experience of activity-based methodology is also likely to impact on their own subjective norms. In relation to perceived behavioural control, it was difficult to assess this at this point of the careers of these students as they were just commencing their ITE. In the quantitative part of the research, 78% of the students either agreed or strongly agreed with the statement that they looked forward to teaching SPHE upon leaving college. However, this statement does not, as it stands, factor in the elements of subjective norms or of perceived behavioural control of the newly qualified teacher when finding himself/herself in a particular school context. A newly qualified teacher may enter the school with positive attitudes towards SPHE, but if the norms in relation to SPHE within the school are negative, for example, if SPHE is marginalised in favour of other subjects, this is bound to impact on his/her plans to implement the subject. Leadership in the school is a significant variable here. Another variable is the response of the children. One student perceived that the topic could be unpredictable in the class room: *"you can't really plan what you do in class...it depends on if they respond or not"*. Ajzen (1991) observes that intervening events may produce changes in intentions or in perceptions of behavioural control, with the effect that the original measures of these variables no longer permit accurate prediction of behaviour. The qualitative dimension of the research again allowed for this variable to become more evident. Teacher confidence emerged as a barrier to perceived behavioural control, particularly in the area of RSE. This issue emerges consistently in existing research. A comment from one of the students in the focus group accurately summarises the facilitators of perceived behavioural control:

On teaching SPHE, one needs confidence, knowledge and also the where-with-all to understand the frailty of the situation. These [are] skills we need to obtain.

Conclusion

This research has demonstrated a number of positive indicators in relation to SPHE, in terms of levels of interest and the importance that the students place upon SPHE. However, the fact that a significant amount of students indicated that the subject was not well taught in their schools at both primary and post-primary level is a source of concern. All of the issues which compromised the status of SPHE as outlined at the beginning of this article were reiterated by the comments of the students in this research. Few teachers will dispute the importance of SPHE, yet this acknowledgement is not necessarily reflected in their practice. Yet, it is too facile to limit criticism to the activities of individual schools. A concerted effort at national as well as local level to implement SPHE effectively needs to be put in place. Many factors compromise teachers' own perceived behavioural control in relation to implementing SPHE. These include: little designated

time on the school timetable, constant competition with exam subjects at post-primary level, currently no SPHE programme at Senior Cycle of post-primary school, the sensitive and potentially controversial nature of some of the material which renders it difficult to teach despite the anomaly that SPHE, unlike most of its counterparts, does not require a formal qualification at post-primary level in order to teach it.

Recommendations

This research yielded a number of recommendations for future planning and implementation of SPHE. Many of these were articulated by the students themselves. The main recommendations can be placed within a number of themes:

Recognition of the subject

The issue of rendering SPHE an examination subject in order to increase recognition was mentioned by a number of students, although interestingly there was not consensus about this. Some considered that the subject may be viewed more seriously if there was an exam at the end but others considered that the subject did not really lend itself to being examined. A potential compromise to this dichotomy of opinion may be viewed in the research of NicGabhainn, O'Higgins and Barry (2010) who recommend the inclusion of SPHE on individual student reports to parents and more broadly the consideration of the quality of SPHE provision in school inspection reports. This is being addressed by the Department of Education and Skills with SPHE being placed under the spotlight in school inspections at both primary and post-primary level.

Importance of mental/emotional health

In terms of subject content, the main recommendation focussed upon mental and emotional health. In this context, students emphasised the importance of stress management skills, particularly around exam time. They also highlighted the importance of positive relationships, combatting bullying and the role of Relationships and Sexuality Education (RSE).

Methodology

Students acknowledged the need for activity-based approaches to SPHE and the use of drama and role play to explore various issues. They also considered that video clips were helpful in this regard. They appreciated the importance of discussion and of having a conversation instead of depending on textbooks and worksheets. Project work was also seen as a useful approach. The role of the guest speaker was seen to be useful *“from time to time to highlight particular issues”*.

Structure

Students demonstrated understanding of the need for a flexible approach to cater for the diversity of needs and interests among students. They stated that planning should be on

this basis and not on the contents of a text book. However, they emphasised that a structured approach to SPHE should be in evidence in schools.

Extension of the programme to the Senior Cycle at post-primary school

While students may have disagreed about whether or not SPHE should be an exam subject, most emphasised that SPHE should be extended to Senior Cycle and rendered compulsory. One student considered that if SPHE were to be extended to the Senior Cycle, students would be more mature and thus capable of a greater understanding of the subject.

Additional Recommendations

A number of other recommendations merit inclusion here although they were not stated explicitly by the students:

SPHE Co-ordinator in Schools

Research demonstrates that schools with an SPHE co-ordinator are likely to be more successful in terms of sustained implementation (DES 2009; NicGabhainn, O'Higgins and Barry 2010). This recommendation has been reiterated in recent report from the Chief Inspector of Schools (2013). The role of the co-ordinator should encompass the efficient use and preservation of the time allocated to SPHE, the identification of possibilities for integration with other curricular areas, the promotion of a whole-school approach, and engagement with the home and community.

Teacher Confidence and Capacity

There needs to be more acknowledgements of teachers' needs when implementing SPHE, particularly in the context of the challenging nature of some of the material. Some material may be omitted due to teachers' lack of confidence in addressing the more complex and sensitive issues which feature in the SPHE curriculum. Allied to this, there needs to be a mandatory requirement of recognised qualifications for the teaching of SPHE at post-primary level so that future teachers feel equipped to address this area.

The implementation of these recommendations is likely to impact on attitudes and subjective norms thus increasing perceived behavioural control and in turn enhancing the likelihood of increased status and implementation of SPHE in the future.

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Intercultural Communicative Competence and Literary Education in Foreign Language Teaching

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Abstract: This essay aims to demonstrate the potential of literary text for promoting intercultural communicative competence in foreign language teaching. While literary education is often considered irrelevant nowadays, intercultural competence (or plurilingual and pluricultural competence, as it is described in the *Common European Framework of Reference for Languages - CEFR*) is the organizing principle of language *curricula*. However, the reading of literature presupposes the same kind of skills involved in intercultural competence, the same dialogic strategy, the same openness to alterity, the same tolerance of indetermination. Critical intercultural awareness is more than just the action-oriented approach seen in the *CEFR*; it is something that presupposes the ability to deal with more complex demands while maintaining a creative strength that should not be underestimated by any teaching. Literature - that intercultural text, *par excellence* – constitutes a useful methodological resource for intercultural competence that involve on-line communication, as well as new information and communication technologies.

Key words: intercultural pedagogics, intercultural communicative competence

Literature and Foreign Language Teaching: the background

Literature's place in foreign language teaching is the product of the complex relationship between theoretical or educational paradigms and social interests, ideological beliefs and the cultural trends of the particular time. The teaching of literature within this context has led to different approaches, which have ranged from the practical to the more educational. Sometimes the literary text has been given a secondary role, while on others its importance has been highlighted, as I have had the opportunity to demonstrate previously (2003).

The use of literature in foreign language teaching and learning can be traced back to the first grammar translation method in the late 19th century, where students' main task was to translate literary texts into their mother tongue. Despite the advantages of such an exercise, it is no longer possible to attain the same high degree of consensus regarding textual corpus and literary education, as many scholars have come to recognise. According to Gerald Graff, this was only possible because many students were excluded from higher education and "the coherence of the old college curriculum reflected a consensus that Greek, Latin and Christianity, and respectable upper-class social values were the foundations of good education" (Graff 2007, viii).

Inspired by the old methods of teaching Latin and Greek, the first grammar translation method consisted mainly of the translation of texts that were carefully chosen to exemplify great gestures of abnegation and certain kinds of citations that went well with these moral standards, whilst serving the purpose of the linguistic models to be acquired.

After this, language teaching has followed a more practical emphasis, with approaches such as the direct method, audio-visual method and the initial years of the communicative approach, and humanistic education fell into disuse. It was in the late 1990s that the communicative approach gained a new interest in literature. Currently, it is not only functional or utilitarian aspects but also ethical ones that are a pre-requisite in so-called intercultural pedagogy or the hermeneutic of alterity (Bredella 2010).

Although literature has never disappeared completely from language courses, such are the doubts regarding its role that detractors point to a variety of reasons for its non-inclusion: it would be elitist; as an imperialist aspect of the culture, it would be off-putting for students; it would give a false impression of the day-to-day reality of the language and corresponding foreign culture, with these types of texts easily being replaced by others that better match the aims of the language programme.

Such a view is likely to have been influenced by the work of Bourdieu in the 1960s, which showed that the teaching of literature perpetuated inequalities at school. The social devaluation of literature, has led to a number of effects, such as literary programmes being academically marginalised and annexed to cultural studies. If, like Aguiar and Silva believe, this situation is influenced by a challenge to institutionalised academic power, it also demonstrates a certain intellectual, social and political malaise (Aguiar and Silva 2007, 21).

Clearly influenced by Bourdieu, the work of John Guillory (1993) focusses on the issue of literary education as cultural capital unvalued by a technocratic society. If we use this logic, foreign languages should be concerned solely with pragmatic, day-to-day communication and that for specific purposes, where literary text is unlikely to figure.

However, Gerald Graff, who also illustrates the rise and fall of literature in university programmes, takes a more positive view when he emphasises that the reason for this decline is as much the fault of teachers and educators failing to demonstrate the validity of their work to the public at large as it is the incoherence of literary education itself (2007, xii). This argument highlights two important points: which culture or literature to choose and what method should be employed to deal with them in a foreign language classroom.

Choosing materials and methodology

The cultural debate in foreign language teaching is far from consensual, while concerns regarding functional communication mean that schoolbooks not only give priority to practical texts that focus on day-to-day cultural behaviour (what Robert Galisson calls minimalist - 1991, 114), but also commonly deal with them in a non-systematic fashion using the following methods: 1) the Frankenstein approach, made up of traditional phenomena and aspects that are detached from the didactic continuum (a fado here, a *vira* dance there, a bullfight here, a *caldo verde* soup there); 2) the 4 Fs approach (folk,

festivals, foods and statistical facts); 3) the tourist circuit approach, focussing on places and monuments; 4) the “by the way” approach, which consists of sporadic reading to demonstrate differences in behaviour (Hadley 2001).

If it is no longer possible to achieve the consensus of the 1960s in relation to what culture and literature should be taught (which was due mainly to the fact that most of the population were detached from education), and if there is some truth in the belief that the implicit cultural aspects necessary for communication are more closely bound up with the culture of the masses rather than to “culture”, per se (in other words, connected to the rest of human life and not only the best of human life), then one has to consider that focussing all content on the everyday elements may not be enough. This option may well be demotivating for the learners, who have to deal with trivial situations similar to those they encounter in their daily lives.

On the contrary, this difference removes a person from their daily existence, as pointed out by Galisson (1997, 147), “opening up the possibility of the possible, making the strange familiar, broadening the individual’s horizons» (id, 145). Iser uses the same logic when he refers to the potential of contact with alterity as a means of overcoming the confines of space and time (1996, 298).

This is why young people should be given the opportunity to transcend their environment and the time they live in via contact with other lives from another time and place. If the annulment of history is the annulment of self (Meschonnic), so is the annulment of alterity, because the I is defined in relation to the Other.

One also has to bear in mind that the value of a text may be disproportionate to the attention it is given in a language class, raising the issue that the text should be worthy of the time dedicated to it. The use of literature in a foreign language class boasts a number of advantages, which I will list.

Linguistically-speaking, literature is porous, according to Bronckart (1997), which means that it offers a wide variety of textual genre that involve different styles, tones and levels of difficulty. This means it is worth using when learning a language at any stage, not only reserved for the highest levels, which has been common practice. Many literary texts possess great linguistic simplicity, making them suitable for all levels.

There are also communicative and methodological advantages to using literary texts: because they are open to a wide range of different interpretations and reactions, these multiple aspects can encourage genuine interaction, which is very difficult to achieve within the confines of the classroom. Effective foreign language teaching creates situations where authentic communication and expressions occur and literary text can easily provide real interaction in the classroom. Verbalising experience and experiencing

words encourages real communication to talk about texts and the relationship we establish with them, which has much to do with the equally important aspect of motivation.

From this perspective, it has to be said that literary texts have an effect on their readers because they are not trivial. If carefully chosen, they provide common themes that encourage interaction between people from different cultures and stimulate reflection. Literature helps balance the acquisition of fluency and linguistic skill; however, most of all, when it regains its place in the classroom, so too do the aesthetic and emotional aspects of the language or what Susan Sontag calls “erotic of art” (1990, 7).

The danger of interpretation becoming a mere ritual, and making no sense to students, is greater when communication with the text is reduced to applying theoretical principles and identifying objective features of the text. This overly technical approach or gratuitous use of theoretical tools often impedes real communication with the work in question. Literature is only relevant to the extent it matters to its readers and involves them.

In terms of intercultural education and citizenship, literary texts have the added advantage of being anti-dogmatic and non-judgemental. Here, they differ from the more focussed cultural discourses and those related to civic education. As demonstrated by deconstructionist philosophers, and Geoffrey Hartman in particular, the very notion of non-determination so characteristic of literary work, is essentially anti-dogmatic. It is here that he believes literature is superior to the cultural discourse that views culture as something instrumental, i.e., as means of social education. In contrast, the literary text is unbiased and does not offer single, moralist solutions or the use of words for a particular purpose (Hartman, 1997, 63).

Intercultural communicative competence as the general goal

In the *Common European Framework of Reference for Languages* (CEFR), which was published by the European Council (2001), in the areas of plurilingualism and pluriculturalism, the “learning to be” and “learning to live together” dimensions are a concern.

To this end, plurilingual and pluricultural competence is defined in the *CEFR* as the ability to use various languages to communicate at different levels, as well as having varied experience of a number of cultures, which includes an educational dimension:

*It can be claimed, moreover, that while the knowledge of one foreign language and culture does not always lead to going beyond what may be ethnocentric in relation to the ‘native’ language and culture, and may even have the opposite effect (it is not uncommon for the learning of **one** language and contact with **one** foreign culture to reinforce stereotypes and preconceived ideas rather than reduce them), a knowledge of several languages is more*

likely to achieve this, while at the same time enriching the potential for learning. (European Council 2001, 134).

An intercultural emphasis is justified to broaden horizons and achieve objectives related to the pursuit of tolerance of what is different and why the Other acts in a particular way, including such concepts as “intercultural competence”, “intercultural communicative competence” or “intercultural critical awareness” (Byram 2009).

Here, I will not focus on whether or not the CEFR is able to conciliate a practical approach - training communicative skills, as described in chapter 2 of the document, and which presupposes undertaking communicative tasks in a variety of social situations (merely functional communication) – with the educational and civic dimension, as stated in chapter 1:

To promote methods of modern language teaching which will strengthen independence of thought, judgement and action, combined with social skills and responsibility. (European Council 2001, 4)

For example, if we think about the different cultures within a culture, such as those connected to age and professional groups, we can say that all communication is intercultural communication and if we accept that, if communication is about not presuming, then teaching literature should be the teaching of alterity. In addition to this, the literary text establishes multiple dialogic links with other texts (literary or otherwise) from other times and places and other ways of explaining the world with its social conflicts or designs, making the literary text an intercultural text, *par excellence*. However, literature seems to be absent from proposals that intend to best develop intercultural communicative competence (ICC), as well as being missing from the majority of educational debates.

In recent years, there have been practical proposals with viable and interesting frameworks for basing teaching on cultural themes, whilst fostering ICC.

One I find particularly interesting is the one developed by Holliday, Hyde and Kullman in *Intercultural Communication* (2010), which brings together theoretical reflection, thoughtful tasks and illustrative materials on three major themes: “identity”, “othering” and “representation”. These three major themes can serve as the basis for designing a framework for the development of ICC. The first one explores how people construct their own identities. The second looks in more detail at the forces which prevent people from seeing others as they really are, assuming that all emphasis should be on understanding the self rather than in essentialist categories of the other. The last theme of “representation” takes a macro view of how society constructs cultural representations, paying special attention to the figures of foreigner or refugee. However, this proposal scarcely covers the cognitive, procedural and experiential skills (knowing how to do and to

know how to react and adapt on the basis of previous knowledge) and ignores literary texts completely.

If what has been said thus far is the starting point for emphasising the importance of literature in the foreign language classroom, both in terms of developing communication skills and individual education, what remains is outlining the best way to achieve these two aims.

Overcoming some difficulties

Teaching effective communication with literary texts is no straightforward task for a teacher. I will illustrate this with two examples I observed when undertaking a previous empirical study (2003).

The first issue has to do with the classroom situation transforming normal literary communication, which is free and devoid of consequences (normally, the decision to read a poem or novel is made by the reader, who does not have to do anything after reading), into a social act regulated by conventions, where students have to prove themselves academically and sincerity is not always easy.

As such, our students apply their contextual knowledge (essentially about authors, trends, stylistic features and theoretical tools) without becoming involved, without making any personal assessment or relating to the text in any way; in other words, without really communicating with it. However, it is possible to help them give personal value to the text, as I have already suggested elsewhere (2010, 78-79).

The second issue has to do with irritability regarding the alterity (otherness) of the work that impedes good communication. Literature is verbal language that, when being decoded, involves knowledge of the language it is written in; however, lacking that knowledge is often not the main communicative obstacle. The irritation that foreign and even native students can feel towards literature can lead to rejection.

However, if the fact that literary text being different can be a problem for a certain kind of very literal, symbolism-averse reader, it is also a good starting point. Indeed, I am convinced that repeated contact with difference, alterity or the relationship established with the Other (other words, other expressions or other worlds) boast great pedagogical potential.

In the words of Geoffrey Hartman (borrowed from German communication theory, where the importance of consensus pits Habermas against Lyotard), literature is a non-communicative provocation (Hartman 1997, 131) and the non-determination, openness to uncertainty and acceptance of ambiguity required when reading literary works, if of undeniable pedagogical value when it comes to contact between cultures and the mediation of conflict that is given such importance in foreign language teaching nowadays,

are not always so well accepted when students want certainties, exact guidance and interpretive solutions. Literature plays an undeniably pedagogical role as it forces the reader, not only to deal with uncertainty, but also to make a judgement that is free of constraints and an awareness that can be used in other contexts, as so well illustrated by the work of Martha Nussbaum (see 2010, in particular).

Choose your route' (s) through literature(s) in language class

In order to achieve this educational objective and cumulatively be able to improve communicative skills, methodologically-speaking, it is necessary to create situations that not only facilitate the student's personal response but that constitute genuine communication and not just academic exercises.

In a foreign language class or multicultural class, literary work should be undertaken focussing on the language of the text itself, and not confused with the task of explaining the text, based on a history of literature and theories of literary text. This traditional exercise should be replaced by reading.

Lyrical forms can be a vehicle for learning language, involving the exploration of graphic aspects, such as spatial elements and punctuation, acoustic, morphosyntactic and semantic elements, as well as connotations. Lyrical text, when taking forms that are often found in common language and part of a country's collective imagery, is also a vehicle for cultural learning.

Emblematic expressions, connotations and traditional heritage made up of proverbs, maxims and sayings provide the opportunity for interesting work¹².

Narratives offer other opportunities for reflection. The characters' choices can be discussed (for example, Huck's decision to break the law and help a slave escape in Mark Twain's *The Adventures of Huckleberry Finn*) and any gaps plugged. Writing letters that are mentioned but not actually reproduced in the text or preparing the defence for crimes committed (for example, Piggy's murder in William Golding's *The Lord of the Flies*) help young people put themselves in other people's shoes. Certain literary works facilitate discussion of social phenomena, as demonstrated by "Lessons from literature" (2009).

In order to involve students more and achieve authentic communication, it is important to use methods that explore their creativity and employ a strategy that places the texts within a broad social framework, beyond the classroom. What is new in psychological research

¹² Work on traditional stories and proverbs in multicultural classes at a school in Seixal can be found in Oliveira and Sequeira (2012). Examples of common sense and codes of conduct in the different languages and cultures of those present formed the basis of exercises for rewriting and critical analysis of how relevant proverbs are nowadays and a study of sexist views.

regarding creativity is that creative potential (which everyone has, regardless of gender, ethnic group or age) can be developed by the appropriate pedagogical approach.

According to Morais (2001, 74), a creative personality boasts independence, self-confidence, resilience, a liking for complexity, curiosity, a sense of humour, an aesthetic sense and a personal attachment to work. To achieve this, risk-taking should be encouraged, limiting the consequences of any failure, while encouraging reflection on what students would like to know more about. It means allowing students to have fun and play with new ideas (irony and humour, albeit sometimes veiled, are often found in literary works and should be exploited). Students should also be encouraged to experiment and assess their own work. I believe it is very useful to engage in activities that can develop the ability to think in terms of possibility and improvement, exploring the consequences of unlikely, unusual and visionary events or thinking about the real results of unreal hypotheses or vice-versa¹³;

Morais (2001) and Craft (2000) suggest a number of strategies to stimulate creativity, from which I have selected the following:

1) Proposing new ways of doing or presenting things (Is there another way of finding the answer to this problem? Could this story end in a different way? What could have happened if the other side had won?);

2) Helping young people discover their passions and interests, giving them the chance to discover different forms of expression and encouraging them to explore unresolved issues: using open questions like “why?” and “how?” promotes research and flexibility of thought;

3) Putting the students in another position or making them put themselves in another situation. This can be done by rewriting stories from a different point of view or narrating possible events with a new identity, taking on a more unusual role, like someone who is blind, paralysed or autistic, like in the case of the main character in Mark Haddon’s book *The Curious Incident of the Dog in the Night-time* (2003).

¹³Many literary works explore this process, like Alfred Hitchcock’s film *The Birds* (based on a story by Daphne du Maurier with the same name), which begins with the unlikely hypothesis of all the world’s birds attacking people. In the same way, Kafka’s *Metamorphosis* starts like this: “One morning, as Gregor Samsa was waking up from anxious dreams, he discovered that in bed he had been changed into a monstrous verminous bug.” The rest of the tale deals with the practical consequences this transformation has on the character’s family life. One of the stories in Ian McEwan’s *The Daydreamer* features a vanishing cream, narrating the consequences of such a discovery. It is possible to ask a student what they would most like to see disappear and create a story around this.

New technology provides interactive tasks where the students are the ones producing, thus making it easier for them to take risks, allowing manipulation and experimentation, applying the principles of idea-generation, adapting, modifying, substituting, rearranging and combining. By encouraging production in a number of areas, students can better develop their interests via collaborative learning and wider dissemination of texts in social media.

Young people can be encouraged to participate in reading clubs, web directories, getting involved in blogs and using applications like WebQuest and Podcast for teaching literature¹⁴. Preparing, producing and dramatizing texts to put on-line are other options. YouTube videos that re-examine classic texts can be discussed and new versions proposed. There are a number of school versions of Kafka's famous parable "Before the Law" on YouTube (for example, "Before the Law" - 2007 and "Diante da lei" - 2009).

These are just some of the ways to rediscover the value of literary imagination through personal appropriation rather than conventional school interaction and technical analysis. Teaching literature (any literature in any language, whether translated or not) has to focus, in the words of Eduardo Lourenço, on human situations and the language that describes them (Lourenço 1994, 35). It should not be the celebration of past heritage but rather an intercultural meeting place of men with other men, in which the future is built via a critical (intercultural) awareness. Hopefully, a future that is not "post-human".

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Curricula in teacher education

Bridging the gap? Student attitudes about two learning arenas in Teacher Education. *A Study of secondary Teacher Students' Experiences in University and Practice*

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Abstract: This study explores how teacher students experience coherence and differences between their study life on campus (focusing on school subjects and pedagogy) and in training schools (focusing on professional practice), and the connection they see between these two arenas of learning. The main finding is that the students, who are in the first semester of their study, experience that on campus they learn theory, also known as “the map”. They see theory as normative, abstract and general, about concepts as well as precise and logical knowledge. In the schools they experience “the terrain”; they gain insight into what teachers are in fact doing on a daily basis. The students also see connections between the two learning contexts, but describe this connection as linear and predominantly unidirectional, in that what they learn during coursework is applied in practice. We discuss if these two arenas will have different functional logics, and argue that this should be made explicit to the students.

Keywords: Learning context, theory and practice, student role, placement, coherence

Introduction

Research and evaluations describing Norwegian teacher education have concluded that the study programs are fragmented and lacking in coherence (NOKUT 2006, Haug 2010). In 2010, the new national curriculum for primary school teacher education reinforced and specified the aim of enhancing coherence. The most significant part of the reform is a dual study program aiming at working as a teacher at level 1-7 or 5-10.

In research and evaluation programs, Norwegian teacher education programs are described as being situated in two learning contexts: one is the subject and pedagogy studies on campus, and the other is the professional training in schools (Shulman 1986, Bruner 1997, Brekke 2004, Bulterman-Bos 2008, Grimen 2008). The distance between these two arenas is often described as a “gap”, building on research about how students evaluate their own professional education (Vaage, Handal and Jordell 1986, NOKUT 2006, Karlsen and Kvalbein 2003, Heggen 2010). The research describes the students as receptive and passive in the learning context on campus, yet more active and involved during the professional training in the schools. The overall impression is that this

dichotomy is a conflict and a problem that should be solved by being bridged in order to increase consistency across the program.

Hammerness (2013) analyzed Norwegian teacher education based on program documents and interviews at six universities and colleges. According to her findings, the educational programs generally suffer from a lack of a common vision. In her report, she applies this lack of a common vision to internal relations between those who teach different subjects in and across higher education and schools. The second challenge is the lack of coherence between the diverse components in the programs, which she describes as “incoherence between subject-area coursework and clinical experiences” (Hammerness 2013, 413). Norwegian teacher education also seems to be influenced by a “personal and individualized nature of vision” (Ibid., 413). This may lead to a fragmented, less coherent curriculum, and a weak scientific core. Finally, she calls for a core curriculum within Norwegian teacher education.

While Hammerness points to “program coherence”, Smeby and Heggen (2012) explore the transition from education to work, and emphasize another form of coherence, what they term “transitional coherence”. Heggen and Terum (2013) found that when students experience coherence between education and professional practice, this strengthens their motivation and subject-oriented identity. The need to improve the level of both program and transitional coherence in teacher education is well documented and is also supported by research on other forms of professional education, such as nursing (Benner et al. 2010). Yet, transitional coherence requires ways of dealing with inconsistencies as well as consistencies. As Heggen and Terum (Ibid., 4) emphasize, “there might be synergies and contradictions between learning in the different arenas”. Consequently, it may be important for the student to handle differences between the idiosyncratic characteristics of the different contexts. For instance, in their review of boundary crossing and boundary objects, Akkerman and Bakker (2012, 152) define boundaries as “*sociocultural differences leading to discontinuities in action and interaction*”. They underscore the need to recognize and acknowledge “increasing diversity in and between schools, work and everyday life”, and “perceiving boundaries not only as barriers to but also potential resources for learning” (153). Lundsteen and Edwards (2013, 158) discuss “. . . transitions between practices and developing the capacity for sense making, rather than transferring knowledge and skills from university courses into workplace tasks”. Sullivan (2005) emphasizes that the world of professional practice and the world of academia are grounded in diverse value systems and fields of expertise. In these perspectives coherence can be concurrent and contribute to unity and congruence, or contrasted, drawing in different directions, for instance, as expressed by Matusov (1996); intersubjectivity without agreement. It means that coherence may not imply common vision, it may also be about attending and handling differences.

A key challenge in professional education is to connect these diverse areas of interests and knowledge, while appreciating their dissimilarities. Jensen and Lahn (2005) and Lahn (2010) emphasize learners' needs to come to terms with the diversity of epistemic cultures across work and higher education, building on Knorr Cetina's (1999) work. From a related area of research on vocational education, Werler (2013) has highlighted the need to address theory and practice as two different forms of knowledge. Ellis (2013), building on Burawoy's (2011) analysis of recent developments within higher education in the UK and USA, distinguishes between instrumental and reflective types of knowledge, with the former being practice- and policy-oriented, and the latter being fundamentally critical and the subject of open, public debate in academic communities. Not surprisingly, the merging of these diverse epistemological positions into one unified, shared approach to teachers' professional practice appears difficult to achieve.

As we have been working with this paper and the analysis of the students' responses, we have increasingly been drawn towards addressing diversity across higher education and schools as a workplace, and using this as a source of learning. In this paper we pursue the idea that consistency is clearly a challenge in teacher education. However, while we see the need to bridge the gap between these learning contexts, we also address the diverse and potentially conflicting aspects of the communities of practice (Lave and Wenger 1991). On the one hand, these diversities may be seen as a fact of life that students, teacher educators and placement mentors have to deal with. On the other hand they may also be powerful resources for student learning. Our focus is, therefore, on students' conceptions of inconsistencies as well as consistencies across the coursework-placement settings. Furthermore, we explore the degree to which students experience a common vision and how they deal with gaps between the higher education context and the schools themselves.

Bearing in mind that higher education and schools are interacting communities of practice in teacher education, we pose the following research questions: How do new students at the onset of their student life depict and experience the campus-based and school-based learning contexts? Do their experiences match or contrast with the descriptions of a split and fragmented teacher education system, as emphasized in research and evaluation reports? What are the potential implications of regarding disparities across higher education and school as sources of learning?

Method

The students who responded to our questions are in their first year of teacher education, aiming at level 5-10 in primary school and secondary school. They have all chosen Norwegian as their main subject, with Norwegian and Pedagogy being the main subjects during their first year of study. In their first year, they have placements in secondary schools, and their placement mentors all have an advanced-level degree in Norwegian.

The article builds on answers from 48 students at the end of their first semester. They were given an open-answer questionnaire on a “reflection day” on campus at the end of their first period of practice. The questionnaire had 13 open questions about the differences and connections between the two arenas, which were subsumed under six headings: learning contexts; knowledge and skills; roles; supervision; organization; and learning across contexts.

The students were told that participation was optional. All students present on the “reflection day” were willing to answer the questionnaire. The subject teacher collected the answers at the end of the session, and there were no indications of the students’ identities on the sheets. With the exception of the topic of organization, almost all the students answered every question. The length of the answers ranged from a few key words up to four lines as transcribed. The answers may not be a complete and complementary description of the students’ understanding and experiences, but are rather an expression of what they found most striking.

The subject teacher transcribed the handwritten answers. The three authors have done the analysis first individually and independently, with two covering each topic. Based on the independent preliminary analysis, the authors continued the analysis collaboratively. We processed the answers through a program of categorizing analysis (Strauss & Corbin 1990). We developed an analytical tool in the form of a table, in which we grouped the answers from the students in one column describing themes and topics generated through individual reading and common analyzing sessions. We applied a table for analyzing the data, consisting of four columns. In the left column each student response was given one row. In the next column we reframed each response by using keywords. In the third column we coded each response and wrote comments in the fourth. The coding was first done individually by two of the researchers and next discussed, compared and adjusted. We then grouped the answers according to the themes generated through individual readings and common analysis sessions. With a few exceptions, we categorized the students’ answers to every question. The writing of the article started with the first two authors writing a first draft, while the third author presented a second draft based on the preliminary version.

We have studied the differences in students’ experiences that are most evident and obvious, in the sense that the students gave the same or similar answers about the college and the schools as learning arenas. The aim of the analysis has been to explore differences and patterns in the students’ experiences and attitudes concerning their teacher education in the two contexts. We have not conducted any quantitative analysis.

Results

We have organized the presentation of results into two parts. Firstly, we describe how the students see the two arenas and their own roles as students, emphasizing students’

descriptions of the campus and the school as learning contexts. Three main fields of interest were identified: *knowledge and learning*, *learner role*, and *community*. In the second part, we address how students describe coherence across learning contexts, focusing on supervision, in addition to observation and participation in teaching. We present some student answers extensively, others with a few descriptive words or phrases; in this way we avoid repetitions. Generally speaking, the presented citations and comments give a broad and nuanced picture of the answers. It should be added that in this first year placement, there is a particular focus on students observing teaching practice. In later school placements the emphasis changes to a more active teaching role.

Higher Education and Schools as Learning Contexts

Education and School – Knowledge and Learning

When describing the kind of knowledge they develop on campus, the students write about subject knowledge.

“Theoretical things – subject knowledge.”

“First and foremost theory.”

“Get the best possible subject competence.”

“I am a student and learn about what I will teach when I have finished.”

“Here we learn much about what research shows and what philosophers have said.”

However, students also place great emphasis on “methods to use when teaching”, “know[ing] about good strategies for excellent teaching practice” and “class management”.

In schools, the students encounter their future profession. A placement is where the students begin their journey into the workplace, as Gardner (2011, 1) suggests. They relate to a class, pupils and teachers. They see “what school is”. Some students mention that during their school placement, they obtain a clearer picture of the occupation they have chosen. They “reflect on what worked and what did not. What kind of teacher I want to be. What kind of relationship to the pupils can work or not?”

“During placement we get the opportunity to connect what we learn in the classroom and things that happens in the reality in the school. We get the opportunity to see many problems and questions that we have heard about in theory. We are able to experience it by ourselves.”

“In practice I learn to make plans.”

“Teacher-pupil-relation, teacher-teacher-relation.”

The classroom and the teaching are thus in focus. “To be in a classroom and participate in the teaching gives me the maximum learning outcome.” In the school context, some see “what it’s all about”; “the whole package, the entirety.”

Many also express that they experience the complexity of the classroom. They pay close attention to what a teacher does and what she needs to know. They also emphasize active learning when conducting observations: “I learn a lot from observing how classes can be incredibly different. We have seen four totally different classes.” They learn about pupils and relationships between teacher and pupils: “I have learned more about how I guide a pupil, and that I think a lot about what I am actually saying when pupils are present.” They feel that they are “observed” by the pupils, which implies that they have to take on a role as grown-up models for the young: “Model for all pupils, teach positive attitudes, I learn to be respected and grow within, be a better person.” There seems to be agreement among the students about the placement context being the most rewarding: “I feel that I am learning/remember much more from practice than from sitting and reading on my own.”

Education and School – Learner Role

In different parts of the questionnaire, the students express their experiences about taking part in collaboration on campus and in the school. They write about differences between these contexts, that both of them demand different kinds of activities, but that they also have shared characteristics. One recurring description of how it is to be a student on campus is that they feel like “pupils”:

“Pupil, first of all.”

“My role as teacher student is first of all to learn and listen.”

While the description of a receptive “pupil”-role is dominant, some emphasize an active role, also when listening:

“Be an active student, both in listening and in writing. Be responsible for my own learning.

“Observe, reflect, learn, and be independent. Pick up things I can use in practice.”

In diverse ways, the students are characterized as autonomous learners.

“We are left much to ourselves, while quite a lot is expected of us. Responsibility for one’s own learning, you have to read, otherwise you are in deep trouble.”

“Learn a lot about responsibility. Learn about the idea of being teacher.”

The active student role includes a wide range of diverse roles: “As a student I acquire knowledge by listening and asking questions, as a fellow student by working in groups with presentations, as a teacher by presenting knowledge to the pupils/students.”

When the students describe their participation in the placement schools, they emphasize common characteristics with the college: “Much of the same as on campus: be active, ask questions. Share experiences with the practice teacher.” We also found several clear differences in the description of practice schools as compared to the campus; the requirements are more explicit, requiring the students to take part and contribute in a more active way: “As teacher student in the school you are met with more obligations and requirements concerning the conveying of knowledge in practice. I am an observing person who can discuss what I see. I have a role as a collaborative partner for my fellow students in the practice group. In this role I learn to be independent.”

Education and School – Communities

The students express that working with peers is a key aspect of teacher education on campus.

“As a teacher student on campus I am a ‘pupil’ for a teacher and a collaborative partner for my student peers. In this role I learn to be reflective and to collaborate.”

“I learn to treat my fellow students and lecturers with respect.”

“Inclusive – learn to be that.”

“As a fellow student I acquire knowledge by working in groups and performing, and by presenting knowledge to pupils/students.” It is important to “read what I have to, so that I do not disappoint my placement group.”

The students also describe their social role in the placement schools as a community of learning. “[I am] an observer who is interested in discussing what I see. I also have a role as collaborator for my fellow students in the practice group.” Commonalities across the school and higher education contexts are also emphasized: “Much the same as on campus, I share experiences with the placement mentor.”

The placement mentor is described as an important collaborating partner, different from the teacher educators. The latter are actually absent as collaborating partners in the descriptions (except for what students describe about being active in the teaching sessions). The students also focus on the learning community in the schools.

“The other employees in the school gave the impression of liking us being there.”

“[. . .] here I am a part of a teacher team.”

“[. . .] the other teachers are curious about what we do, what we think and so on.”

In addition, they describe pupils as a part of the learning community, specifically in the sense that the students emphasize the teacher role as a caring person: “I become a

caring person with great responsibility. I shall both teach the pupils what is expected from me, but also see each individual pupil and care for them.”

Coherence – Campus and Placement Schools

In this section, we present student responses that address linkages across the two arenas. Some emphasize the gap between being a student on campus and in the placement school. As mentioned above, we see both continuities and discontinuities across contexts as aspects of coherence. While the students underlined the importance of learning something on campus that can be useful in their teaching practice, the description emphasized the gap between being a student on campus and in the school.

Discontinuities

One student used the map metaphor. On campus “it is like reading a map. You have an idea about what the terrain looks like, and you make your choice of track. And then, suddenly you are there, stuck in the marsh.” This could imply that one thinks he or she knows what it will be like as a teacher, but often, or typically, something unexpected happens in the classroom, and instantly his or her planning seems irrelevant and they are required to improvise. Another student writes, “Theory: we get questions in our head about what will happen. Practice: We see how it actually is.” One student expresses the relationship between theory and practice as going from a general level to a specific and particular one: “Theory is on a superior level. I learn subject matter, what I have to know as a teacher. In addition, I learn about concepts, and about laws. Most important is what I learn during placement, this is something I cannot learn on campus.” It is challenging to link what one has learned on campus to the reality at the practice school: “From time to time the difference is huge. Teaching on campus is good, but to practice is a whole lot different. Discrepancies and other challenges that appear in practice are difficult to imagine after only reading theory.”

Continuities

The students’ answers underscore that they learn something on campus that they find useful in teaching practice. Through the theories introduced to them on campus, they see practical experiences in a more analytic perspective. One writes that the transition from higher education to placement implies drawing on “curriculum matter and to find reasons why things do not function so well.” Another says: “In practice we get the opportunity to link what we learn in the classroom and things that actually are going on out in the schools. We get the opportunity to see many of the problems and topics we hear about in theory. We get concrete and experienced examples.” One student describes the difference between what they learn on campus and in practice school as follows: “On campus we learn about concepts that relate to what we learn in practice. In practice we learn and see how we can be as teachers, we get experiences with that.” Some students

emphasize that experience from the schools make them critical to theory: “Some mention that it is easier to be critical toward certain theories if one has seen something else in practice.” On the other hand, it is “much easier to write assignments, but also to incorporate one’s own experiences from practice into the theory.”

The students see the subjects, for instance Norwegian and Pedagogy, but also knowledge about teaching in schools, as a necessary foundation for working as a teacher. They encounter topics and concepts from the teaching on campus that are also identified as essential in understanding teaching practice; these concepts are also addressed by the mentors in the schools. For example, students emphasized that they discussed class management extensively in the mentoring sessions. They also refer to didactics, preparing documents, plans for the counseling and the “relational model” of didactics when they describe what they learn in the schools, but also see them as essential aspects of on-campus learning.

Students see many opportunities to bring their experiences from the practice context into the learning arena on campus. Overall, they express that the placement school is the situation where they primarily learn to be teachers, while keeping theory at “the back of my head”. One student points out that “in practice we get the opportunity to connect what we have learned in the classroom to things that are really going on in the school.” Nevertheless, it is the experienced differences between the two contexts that the students mainly emphasize.

Counseling during placement is described surprisingly similarly from student to student. One of them writes that the teacher mentor invites the students to take part in a dialogue and is willing to listen to what the students have learned: “Trial and error, here one must search and select among theory from the campus, both Pedagogy and Norwegian, and see what works. The best way of finding one’s own method is to try many different ones, and then find out what works for you.”

The following is a typical quote about mentoring: “Group conversation where the teacher mentor guides the discussion, but students reflect and discuss openly. Dialogue and counseling.” Typically, the mentoring setting is described as a discussion about “what happened in the classroom during the day.” Several students mention that they use didactic concepts in the mentoring, while others miss such use. Most of the students mention “class management” as a topic in the mentoring. Classroom management had also been a key topic on campus in the teaching of pedagogy, as expressed by the students. “We focused on class management, and I am glad that we had worked on that topic.” They write that they have learned to make concepts concrete in different ways during their placement.

“How to lead a class and at the same time care for the individual pupil?”

“What does the placing of the children in the classroom mean to the learning environment?”

“What does teachers’ authority mean for the organization, and how should a teacher execute authority?”

This same topic has been addressed in placement mentoring, with one student describing counseling in almost poetic terms: “It is lifting us, making us develop.” Broadly speaking, mentoring is limited to what goes on in the classroom, to the pupils and the students’ own teaching, but the students emphasize that it also *contributes* to connecting their teaching experience and what they learn on campus. However, in the student responses, the higher education and school nexus is far more often emphasized as discontinuous than continuous.

Discussion

Recent theorizing on university workplace relationships increasingly emphasizes discontinuities within professional education programs, across subject components and across the academic setting and placement settings. Keeping to the topic of this paper, the academic practice and school placement nexus, the students’ responses provide some interesting perspectives on the issue. Clearly, the students are searching for a meaningful connection between what they learn in university and what they experience at their school placement. Yet, the dominant picture provided by these data is an emphasis on the differences and discontinuities, and the boundaries between higher education and schools as learning contexts. In this respect we interpret these data to support the views presented in the introduction, specifically regarding the need to address discontinuities as a fact of life and something that has to be addressed as a key aspect of professions generally, and teacher education in particular (e.g., Lave and Wenger 1991, Akkerman and Bakker 2011, Werler 2013). As these students saw the situation, academia and schools are in some significant ways two diverse worlds. There is limited space here to further elaborate on this issue through the lens of theoretical contribution, but we will link the students’ responses to some ongoing theorizing.

For instance, Werler (2013) has accentuated the gap in vocationally oriented educations: theory and practice are two different forms of knowledge situated in different social systems. Like Sullivan he does not accept the assumptions underlying, for instance, political documents, evaluation reports and research (e.g., NOKUT 2006) that learning in these two systems can or should make up a unifying entity. There are insurmountable structure- and function-based differences in the systems that create these “obstacles”. The idea of a core curriculum that informs teaching and learning in on-campus learning and learning in schools (Hammerness 2008, 2013, Fetterman et al. 1999) may have its limitations. Lundsteen and Edwards (2013, 156) frame “transitions from university to a workplace as a process of navigation through practices”. It is a transition that may be

supported by “developing a capacity for sense making, rather than of transferring knowledge and skills from the university course into the workplace tasks” (Lundsteen and Edwards 2013, 158).

Kristin Heggen (1995) shows in a study about the placement component in nursing education that students work in a field of tension between two different forms of practice: that of the education and that of the school context. In her study of the professional education at Oslo University College, Grønn (2010) underlines that there is a struggle between the professional setting and universities about the defining power concerning the content of the placement periods. It is not to be taken for granted that the relationship between learning at the university and in school placement is necessarily complementary; it may in fact be conflictual.

A series of American studies about professional educational programs suggest a conceptualization of key disparities between the academic theoretical elements of the programs and the practice-based professional skill-oriented elements (Sullivan 2005). Three types of “cognitive apprenticeship” in the professional educational programs were portrayed and make a space for conceptualizing the lines along which conflicts might occur:

- Community around intellectual and cognitive knowledge: students learn to analyze and reflect, make arguments and understand research that dominates the scientific basis of the subject field.
- Community around practical skills: students learn the skills of the professionals through taking part in imaginary or practical contexts.
- Community around values and attitudes: students share the value basis of the profession through learning and practicing.

Accordingly, there are three sets of values. One cognitive apprenticeship is grounded in academic values typically taught on campus. In Ellis’s (2013) framing, these values are characterized by being critical, developmental and public within a community of researchers. The next set consists of the professional, more practice-oriented values, executed in professional settings. In teacher education, these are associated with effective teaching practice, ad hoc efforts to address the multiplicity of classroom events and processes, and local knowledge. Its public domain is more towards the sphere of policy than research. Sullivan emphasizes that the third community and set of values is fundamental in the professional setting, but is predominantly based on engagement in professional communities and the highlighting of professional autonomy as well as social and societal responsibility.

We recognize many of these categories in the students’ responses. Subject knowledge, theory, research and scientific concepts are examples of what they learn in the academic

community on campus. Students encounter diverse perspectives, conceptualizations and approaches to teaching, learning and schools as social institutions. At the university, they learn to reflect in logical ways, making assumptions explicit and acquiring research-based teaching practice. The skills involved in using subject knowledge when teaching, in particular to interact with pupils, to grasp the consequences of one's own actions and practice and dealing with unexpected situations, may be more connected to the professional context. Students also stress that they learn about values and norms in practice as part of their school placement experience. To some extent, students express the disparities as competitive, rather than tensions to be worked on.

In addressing discontinuities we need to keep in mind that, at its core, teacher education is constituted as a nexus of the higher education context and school placement. This takes us back to the issue of the nature of the connection between the learning of theory and the practice of teaching, as experienced by the students. Students tend to argue that theory, what one learns on campus, is the “map”. They see theory as normative, abstract, logical and general; it is about concepts, limited and logical. Practice, what one learns at schools, is the “terrain”; it is about the complexity that teachers face in the classroom. In school placement the students learn about applying subject knowledge in the classroom, where unexpected things happen, where pupils demand different things and challenges occur constantly and unexpectedly.

The patterns in the students' responses lead us to the following description of the relationships between theory and practice:

- From the general to the concrete, particular and contextual.
- From relating to rules and laws about school, pupils and teaching/learning to meeting single pupils and unique situations
- From understanding to use; from knowing to doing
- From making plans to reacting ad hoc to what happens in class

Conclusion

We started this paper with a critical point about Norwegian teacher education as fragmented. It is seen as an objective to help students “understand and identify more clearly the linkages between theory and practice and subject matter and pedagogy” (Hammerness 2013, 415). The emphasis on a common vision, coherence and core subject content leads in the direction of connecting, in the tightest possible manner, what students learn on campus and in the schools. This means that programs should facilitate the transition of subject topics and content from one setting to the other.

In our research question we asked whether the picture that students give of the two learning arenas of their education supports or contrasts with the description of a split and fragmented professional qualification program for teachers.

This study has a limited scale, and can in no way alter the common understanding of coherence between the two contexts. Nevertheless, we will put forward some critical questions based on the descriptions from the students. Their answers give a somewhat different picture of the coherence within teacher education.

To be a student on a college campus and in the placement schools are two very different contexts. Nevertheless, we do not see students mentioning this “gap” as a critical oriented context, the teaching on campus, they tend to emphasize two fundamentally different sources of learning and kinds of knowledge. School placement implies a change of positioning from being student (also described as a “pupil”) to being a teacher. It may be that this translation and shift of positioning is a core requisite of the professional setting as a learning arena in the qualification of professional teachers.

The challenge for teacher education may then be to support the students in their development and their change of position from pupil to student, and from student to teacher. One goal for the educational program will then be to support the students in relating actively to research and theory on campus, and likewise relating actively to practical skills in the school setting. This could imply approaching the university placement issue. They write about what they see as different parts, but that they need both, and that the parts complement one another. Rather than a planned and organized *transferring* of theoretical knowledge from a research- relationship as a transition between practices that may be supported by “developing a capacity for sense making, rather than of transferring knowledge and skills from the university course into the workplace tasks” (Lundsteen and Edwards 2013, 158). To manage such “sense making”, teacher education should provide students with intellectual tools that allow them to recognize the varied purposes of such diverse fields of practice, namely learning theory at a university and teaching practice in schools.

This leaves a space where students have to work on their own towards understanding both settings in their own terms, as well as grasp how what they learn in one of these settings may strengthen their learning in the other. This may require other relationships between campus and school than what is currently requested in the bulk of evaluations and literature surrounding teacher education. However, the key strategy for improving teacher education may consist of more than simply narrowing the gap and developing a shared vision and consistency across the coursework and school placement components of the program. There is also a need to accept that the discontinuities will remain in some fundamental ways and to prepare students to explore these disparities, and subsequently look for meaning that transcends the local practice in each setting. From the institutional point of view, the way forward might be to make the differences between the contexts more explicit to the students. This might mean that students should be able to understand their future role as teachers through the lenses of both their learning arenas.

These perspectives might add another, supplementary view regarding the critique of teacher education as fragmented, beyond those emphasized by, for instance, NOKUT (2006), which involve preparing students for handling the discontinuities within teacher education. We find it hard to imagine how such an agenda can be implemented without also including both university teachers and schoolteachers in a dialogue about the same issues. By recognizing and acknowledging sociocultural differences; diverse value systems and priorities; and forms of knowledge such a dialogue could be a learning experience for students, teachers and teacher educators. Shared ideas and continuities across coursework and placement could be one outcome. Shared understanding of potentially increasing diversity between higher education and workplace could be another. In research on coherence in teacher education (and professional education generally) there is a need to “study how sociocultural differences play out in and are being shaped by knowledge processes, personal and professional relations, and mediations, but also in feelings of belonging and identities (Akkerman and Bakker 2011, 153).

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Education for social justice, equity and diversity

Educating for a socially just Future: Making heard the Voices of the Oppressed

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Abstract: Educating for a socially just future also implicates critically thinking through the content knowledge taught in schools, since knowledge is a social construction reflecting the perspectives and values of the ones in power to construct knowledge. The research presented in this paper explores the way teacher educators are able to encourage their students' critical attitude towards content knowledge. Data were derived from a small project at *iPabo Academy for Teacher Education* in Amsterdam aiming to establish students' awareness of biases within constructed knowledge concerning a particular area of Dutch unease: the Dutch involvement in transatlantic slave trade and slavery. The research makes several contributions to practical wisdom on this topic. For instance, opportunities for students to bring into discussion personal knowledge and constructed knowledge led to a more critical attitude. Furthermore, artefacts like novels provided new and challenging perspectives in a powerful way making heard the story behind the facts.

Keywords: content knowledge; power relations; awareness; critical attitude; social justice education

Introduction

Many interpretations of the commonly to Sir Francis Bacon attributed Latin aphorism 'scientia potentia est' ('knowledge is power') state that this phrase implies that obtaining knowledge involves increasing power, however, the phrase implies as well that the ones constructing knowledge are in power. After all, constructing (mainstream) knowledge means deciding who or what is worthy of being known and who or what is not. Due to the fact that processes of knowledge construction happen explicitly or implicitly, constructors of mainstream knowledge are either easily recognizable and identifiable (as for instance authors of schoolbooks, or members of a committee developing a national historical canon), or entirely invisible in case of popular, tacit knowledge within a community or society.

An example, being elaborated on in this paper, of powerful but invisible popular knowledge construction concerns the national history of the Dutch involvement in the transatlantic slave trade and slavery, an important part of the sorrow of Dutch history hardly having been discussed or even talked about in the Netherlands. "The Dutch dislike writing about the slave trade. Their distaste for the subject means that few of them are actually aware that the achievements of the 'golden century' were inextricably bound up with the slave trade. Generation after generation has learned about the little republic whose huge fleet sailed the globe (...) making money through trade (...). This rose-tinted

picture of the nation's history leaves no place for the slave trade; consequently it is not mentioned." (Emmer, 2006, p. vii) The constructed popular knowledge within Dutch society gained the power to practically eliminate the drawback of the Golden Age.

After many years, in which this attitude of silencing the Dutch involvement in transatlantic slave trade and slavery was reflected in the Dutch history books for primary education as well, editors of history books show growing interest in the issue nowadays (Hogervorst, 2006). However, this growing interest of editors doesn't automatically involve primary schoolteachers' growing awareness of the issue. No research has addressed teachers' value judgements about this particular theme of slave trade and slavery, but it was striking to us that two out of three students who intended to start a small project on this theme with their ten- till twelve-year-old pupils, encountered reluctance by their mentor teachers. These mentor teachers were presumably unaware of the omission within the constructed tacit knowledge in the Netherlands, reacting reluctantly instead of urging their student teachers to balance the national story.

Establishing awareness of biases within constructed knowledge by making heard the voices of the ones not in power to construct mainstream knowledge, contributes to doing justice to the ones being treated unjustly. That is why the research presented in this paper explores the way we (as teacher educators) are able to encourage our students' critical attitude towards both mainstream knowledge and content knowledge by making heard different perspectives, including the voices of the oppressed. The purpose is to increase practical wisdom (Aristotle, 1985) concerning students' developing awareness of possible biases within mainstream knowledge and content knowledge taught in primary schools.

Conceptual framework

The Western empirical and, more specifically, positivistic tradition striving for the construction of knowledge uninfluenced by the constructor's normative assumptions and position within society, considers knowledge construction to be neutral, objective and universal. However, postmodern and critical theorists have developed important critiques of this paradigm, pointing out that "knowledge is socially constructed (...) reflect[ing] human interests, values and action (Code, 1991; Foucault, 1972; S. Harding, 1991; Rorty, 1989)" (Banks, 1993, p. 5). According to these theorists, the impossibility of value-free and value-neutral knowledge construction demands recognition and identification of implicit biases, assumptions, perspectives and points of view.

In order to create helpful conceptual tools for identifying these biases and perspectives, James Banks (1993) distinguishes five (in reality overlapping and intertwining) types of knowledge: personal and cultural knowledge; popular knowledge; mainstream academic knowledge; transformative academic knowledge; and school knowledge. School knowledge, consisting of both the concepts presented in different forms of media designed for school use, and the teacher's interpretation of those concepts, is highly influenced by

both rarely explicitly articulated popular knowledge and mainstream academic knowledge striving for objective truths. Therefore, school knowledge often reflects mainstream, dominant and established views, truths and beliefs. Becoming aware of the way knowledge is constructed helps students understand how constructed school knowledge reflects the social context and perspectives of its constructors, and thereby encourages the development of the students' critical attitude towards school knowledge. "We should teach students that knowledge is a *social construction* – that it reflects the perspectives, experiences, and the values of the people and cultures that construct it." (Banks, 2008, p. 108)

Other educational theorists (for instance Paulo Freire, 2000 [1970] and Marilyn Cochran-Smith, 2004), sharing Banks' focus on the impact of positional prejudice and sectional favouritism (Sen, 2009) within knowledge construction, are more explicit about the influence of power relations:

"[T]he academic organization of information and inquiry reflects contested views about what and whose knowledge is of most value. In addition, influential parts of curriculum and instruction include what is present or absent, whose perspectives are central or marginalized, and whose interests are served or undermined." (Cochran-Smith, 2004, p. 19)

Methods

The study was carried out in 2012-2013 amongst a group of bachelor's students in their final year of teacher education at *iPabo Academy for Teacher Education* in Amsterdam, specializing within the area of Diversity & Critical Citizenship. The entire group of twelve students participated in the research.

In our effort to establish students' awareness of biases within constructed content knowledge by making heard different perspectives, we started a small project discussing the transatlantic slavery and slave trade involving perspectives from different people, institutions, sources and periods in time. During this project a transformative perspective on the subject was presented, giving students "opportunities to create knowledge themselves and identify ways in which the knowledge they construct is influenced and limited by their personal assumptions, positions, and experiences." (Banks, 1993, p. 11)

Data were collected by the researcher who is also the educator, allowing data to be collected in a natural setting, i.e. during class. Data were collected in various ways. At the start of the project, students were invited to write down their thoughts on the transatlantic slavery and slave trade. Besides, during the project the sessions were recorded and later transcribed. The group interview about what had been meaningful to the students at the end of the project was recorded and later transcribed as well. Students' reports on their teaching-experiences on this subject are also included in the data.

The data were analysed by a small group of researchers formed by the researcher / educator involved in the project and two additional co-researchers who were not involved in the process of data collection. This content analysis of the data was performed at two levels: open coding and axial coding (Strauss & Corbin, 1998). Open coding is the part of the analysis concerned with identifying and naming phenomena in the text (in vivo codes), and thereby opening up the text and exposing the thoughts, ideas and meanings contained therein (Strauss & Corbin, 1998). At the level of axial coding open were related codes to each other, looking for categories in order “to form more precise and complete explanations about phenomena.” (Strauss & Corbin, 1998, p. 124) Throughout the process of open coding and axial coding, the following sensitizing concepts functioned as suggested directions along which to look (Blumer, 1969): ‘awareness’, ‘new perspectives’ and ‘critical attitude towards constructed knowledge’.

Results

The presented results are related to varying ‘levels’ of awareness and familiarity with the subject of slavery and slave trade, starting with embarrassing remarks probably due to unfamiliarity (‘Embarrassment’), followed by remarks reflecting growing awareness (“‘Colonization: weird’”, ‘Origins of Dutch Wealth’ and ‘The Story behind the Facts’) and ending with a complex discussion on responsibility (‘Responsibility’). To guarantee confidentiality, the respondents’ names are fictional.

Embarrassment

Probably because of the unfamiliarity with the subject, some more or less embarrassing situations occurred during both the project at the Academy and the projects at primary schools. Discussing the abolition of slavery in 1863 and the compensation for the slave owners by the state (each slave released was compensated for with 300 guilders by the Dutch Republic), one of the students replied:

Michelle: “That sounds quite nice to me!”

But finding out about the ‘compensation’ for the freed slaves (the obligation to continue their former work for another ten years!), made a student wonder:

Kathy: “So they had to *earn* their freedom...”

Another embarrassing situation happened during a student’s project at her primary school. Talking about the slave ships and the transportation of slaves from Ghana to America, one of the pupils reacted:

Tim: “Cool!! Travelling by boat!”

After having seen the documentary about life on slave ships, the pupil apologized for his previous remark:

Tim: "I'm so sorry for having said travelling by boat seemed cool to me..."

"Colonization: weird!"

Being shown a map of the Dutch Maritime Empire during the 17th Century, one of the students wondered:

Kathy: "It's amazing; we're a tiny little country possessing land all over the world. Weird!"

Where it's not clear whether this student is proud of her country or not, the response of another student is less ambiguous:

Ann: "And we're still possessing overseas areas... It really amazes me that a country like the Netherlands still claims overseas areas. Still in need to boss around in a country on the other side of the world."

Origins of Dutch Wealth

A small cynical discussion reflected the students' awareness of the silenced story of slave trade in the Netherlands:

Ann: "We're being taught our wealth originated from trading and the Dutch East India Company."

Sophie: "Calling it the Golden Age."

Justin: "How well we were doing! Hurray!"

Ann: "Yeah, we really did well those days."

Then, one of the students brought up the idea of being embarrassed about the origins of the Dutch wealth, and being able to be secretive about it:

Amy: "Hardly anyone admits: 'My family used to be slave traders.' Being a victim, having been a slave or being a slave's descendant, you feel like: 'Here I am, being excluded for being black, what is it I'm doing here? Right, I used to be a slave; my family used to be slaves.' That's rather different from being a Dutchman; attracting no attention at all; having been a slave trader in secret."

The Story behind the Facts

Some students remembered from their history lessons at primary and secondary school the so called triangular trade route: Dutch traders leaving the Netherlands to buy slaves in Africa; sailing to the so called West-Indies to sell the slaves; making money out of that, buying products like sugar, and sailing back to the Netherlands.

Justin: “The triangle... I still remember it from my history lessons. But I wonder: sailing from Africa to America – that’s the slave trade. But what was transported from America back to the Netherlands?”

Caitlin: “Cotton, sugar...”

Justin: “Right, cotton, sugar... But what’s been transported from the Netherlands to Africa: was it gold?”

Later on, a similar question was being asked by another student:

Ann: “How did they transport the slaves to the coastal areas in Africa? Was it us, the Dutchmen, the slave traders entering inner Africa, visiting the villages?”

During the group interview about what had been meaningful to the students, this same student mentioned:

Ann: “What really struck me was that we used to learn about the facts; the triangle for instance. But the questions we pose are the same questions children will pose: how did those people reach the slave boats? What was it they took with them? Who did what? How did it work? What was life on a slave boat like? I had never learned about that till now, that’s new to me. All I learned about was the triangle, but never about what had happened in Africa.”

This student became aware of the fact that she was unaware of the story behind the facts.

The meaningfulness of ‘the story behind the facts’ was reflected in various reactions concerning novels (fiction, maybe factio) on slavery as well. For example, the first chapters of Lawrence Hill’s *The Book of Negroes* (2009 [2007]) being made available to the students encouraged one of the students to borrow a copy of this novel, wanting to know all about it and feeling addicted to the story:

Nanette: “Right now, I’m not fun hanging around with. All I do is reading.”

Responsibility

The complexity brought about by the students’ developing critical attitude manifested itself in a discussion which had its starting point in a fragment of MTV’s Coolpolitics, covering a discussion between Jesse Jackson, civil rights activist and Baptist minister, and a Dutch politician (Jackson, Baalen van, Corton, & Vuijsje, 2010). Being asked what the Netherlands is known for, Jackson immediately brings up the Dutch history of slavery and slave trade as one aspect of Dutch identity. The Dutch politician’s reluctance to relate slavery to Dutch identity (“Well, I was not a slave trader...”) leads to Jackson’s following respond:

“History did not start when you were born. [Cheering and applause by the audience.] I raise that not to demean anyone, but history is unbroken continuity. So those who were enslaved, inherit poverty. Those who are traders, inherit wealth. (...) That's a fact. We ought to be knowledgeable of that, be aware of that, and affirm it. Not as a negative, but as a part of our growth.” (Jackson, Baalen van, Corton, & Vuijsje, 2010)

Especially the remark ‘History did not start when you were born’ provoked a discussion among the students on responsibility and dilemmas of loyalty.

Nigel: “I really liked that remark... That’s just the way it is. The Dutch politician is trying to get away with it: ‘It wasn’t us! (...) We have to forget about it.’ That’s what he was claiming, basically. And it’s exactly the wrong thing to do.”

But then, a student who had been living and working in Suriname for three months because of her international internship protested in a quiet way:

Nanette: “During our stay in Suriname, people sometimes became angry with us. A couple of times, people held us responsible... It made us wonder: ‘Wow, what’s happening? (...) We can’t help it!’” (...)

Sophie: “In a way, it does make sense to me. They inherited poverty; we inherited wealth. We can afford ourselves not to rethink history on a daily basis. That’s very different to them. So yes, it does make sense to me. Having someone [a wealthy Dutch person] standing right in front of you makes you want him to acknowledge this, and for once to feel very guilty about his wealth. I think I would have done the same. You’re occupied by it all day.”

Ann: “All they can think of is ‘why’? And all of a sudden they meet ‘the reason why!’”

Nigel: “But right now, there’s nothing you can do about it. Does that mean no co-operation would be possible because of our ancestors?”

Sophie: “I don’t think it’s useful responding that way, but all I wanted to say is that it does make sense to me. [Having inherited poverty,] it isn’t hard to imagine wanting someone to bite the dust before communication can continue.”

Laureen: “In Suriname, we met a man having a little chained monkey. We felt sorry for the monkey. But the man immediately brought up slavery in quite a hostile way. ‘What about slavery?!’, he asked us. Compared to slavery, this chained monkey didn’t mean anything to him.”

Discussion

The purpose of this research was to increase practical wisdom by exploring ways we (as teacher educators) are able to establish awareness of biases within both constructed mainstream knowledge and content knowledge taught in primary schools. The results of the research indicated growing awareness on the part of the participating students of possible biases, marginalized perspectives and positional prejudices within constructed popular knowledge and school knowledge concerning the (Dutch involvement in) transatlantic slavery and slave trade. One of the factors contributing to this growing awareness can be identified as the increasing familiarity with the story behind the facts. Despite of the horrifying stories within Lawrence Hill's novel, *Nanette* wanted to know and understand the emotions, wishes, desires and troubles of the people she met in this novel. Along with Ralph Ellison, Martha Nussbaum remarks: "Narrative art has the power to make us see lives of the different with more than a casual tourist's interest." (Nussbaum, 1997, p. 88) Especially when it comes to blind spots, she argues, "we need to cultivate students' 'inner eyes'" by making available literature for instance that will bring students in contact with new perspectives "on areas of social unease." (Nussbaum, 2010, p. 108) This small project on the Dutch involvement on slavery and slave trade contributed to this 'bringing in contact with new perspectives' in a particular area of Dutch unease.

The discussion, provoked by the presented new perspectives, on responsibility for events one personally played no role in uncovered the complexity of questions arisen by a critical analysis of constructed mainstream knowledge. Whereas it made sense to Sophie and Ann that the descendants of the victims are eager to hold responsible the descendants of the wrongdoers, this opinion made Nanette and Laureen feel uncomfortable having personally experienced what it means to be held responsible for something they were hardly aware of and in which they personally played no role at all. By discussing responsibility this way, the students were about to participate in a long and still debated philosophical discussion on the possibility of moral obligations we haven't chosen and that can't be traced to universal obligations. From the standpoint of individualism, being bound by moral ties we haven't chosen and that can't be defined as universal is considered impossible. (Sandel, 2010 [2009]) A person cannot be held responsible for what his country does or has done unless that person chooses implicitly or explicitly to assume such responsibility. Therefor, from an individualistic point of view responsibility for the effects of transatlantic slavery and slave trade has to be denied, saying 'I didn't enslave anyone'. On the liberal conception, responsibility will be denied as well, because in the liberal conception obligations can arise in only two ways:

1. as natural, universal duties we owe to persons as persons; no consent is needed (for example, treating persons with respect)

2. and secondly as voluntary obligations arising from consent (for instance, someone having the obligation to paint someone else's house because of a promise). (Sandel, 2010 [2009])

Along with narrative conceptions, Michael Sandel (2010 [2009]) adds a third kind of obligation, i.e. obligations of solidarity, or membership; particular obligations which require no consent to those with whom we share a certain history, deriving from a recognition that our life story is implicated in the stories of others. Within this point of view descendants of slave traders and slaveholders do have responsibilities towards fellow citizens whose ancestors have been enslaved by their ancestors.

In a positive or negative way, the individualistic and liberal conceptions of responsibility are easily recognizable in the students' discussion. Nannette and Laureen referred explicitly to the individualistic point of view, saying 'we can't help it'. Whereas Nigel explicitly rejected the individualistic and liberal conceptions of responsibility, Sophie and Ann implicitly rejected those conceptions adopting the standpoint of the descendants of the enslaved. Sandel's option of responsibility because of solidarity didn't occur explicitly during this discussion. Although Nigel's explicit and Sophie's and Ann's implicit rejection of the individualistic and liberal conceptions of responsibility could have been a lead to Sandel's option, the notion of obligations of solidarity hasn't been considered fully. The discussion went on about young Germans still feeling guilty about and responsible for the Holocaust nowadays; a feeling of guilt and responsibility never seen in the Netherlands when it comes to slavery and slave trade, according to the students.

Especially this discussion on responsibility and dilemmas of loyalty shows that making heard the voices of the ones not in power to construct popular and school knowledge, not only balances the national story (by adding the stories of the oppressed) but also complicates it. After all, making heard the voices of the enslaved complicates life of the descendants of the enslavers.

Conclusion

The present study makes several contributions to the practical wisdom concerning ways in which teacher educators are able to encourage students' critical attitude towards both mainstream knowledge and school knowledge. First, the results indicate that opportunities for students to create knowledge themselves and to bring into discussion different types of knowledge with their own personal assumptions, positions and experiences (Banks, 1993) do lead to a more critical attitude towards constructed knowledge. Therefore, teacher educators should challenge students to critically rethink both their personal assumptions and key assumptions within constructed knowledge. Drawing upon the students' personal and cultural knowledge about the subject at stake can be an important first step, as well as bringing in and putting up for discussion new perspectives.

Second, artefacts like novels, poetry, films and photography can provide new and challenging perspectives in a very powerful way, due to its ability to increase a person's narrative imagination (Nussbaum, 1997). Arts play a vital role in making heard other people's voices, and thereby evoking visibility for the ones made invisible and involvement with the ones unknown.

Third, challenging students to think critically also has implications for the teacher educator's role during discussions. For being able to participate in the discussion and at the same time to reflect on the discussion (so called 'reflection in action', Schön 1983) can be considered an advantage when it comes to encouraging students' critical attitude. If, for example, the educator would have been aware of the omission of Sandel's option of responsibility during the discussion, she could have brought up this new perspective in an effort to challenge the students to think through their opinions from this new point of view and strengthen critical thinking.

Fourth, complicating the national story by making heard the voices of the oppressed is something teacher educators have to accept and should not be put off by. After all, educating for a socially just future also means making heard the voices of the oppressed, even if it complicates social reality.

This research also has brought up some issues in need for further investigation. A challenging task for further research is the exploration of ways teacher educators can develop their ability to both participate in a discussion and at the same time reflect on the discussion. Practical knowledge about this subject would be of great help in the effort to encourage students' critical attitude. Another promising line of research would be to identify aspects giving artefacts the power to bring people in contact with new perspectives. Like Chimamande Adichie for instance drew attention to the aspect of non-stereotyping (Adichie, 2009), we recommend that aspects like these will be further explored resulting in practical wisdom about the adequacy of artefacts. Both lines of research will contribute to the aim of teacher education to encourage students to think critically and develop a critical attitude towards constructed knowledge.

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Global education

The P2P Educational model an example of innovative learning linking technology, business and research.

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Abstract: This paper describes and assesses the impact of a new educational learning model called Peer to Peer (P2P). This study is focused on Laurea, Hyvinkää's Finland campus and its response to bridging the gap between traditional educational methods and working reality, where modern technology plays an important role. The study evaluates an undergraduate business management programme. A qualitative methodological approach is used assessing the students' experience of projects with companies and their theoretical learning without formal lectures. Student feedback via in-depth interviews form the basis which provides empirical findings from students from different countries. Specific projects involving real businesses within this unique P2P programme are described and assessed within the overall objective. The study concludes that although it requires a different role from both teachers and students the relevance for European education is that both academically and practically this type of model delivers a more employable graduate with more transferable business skills.

Key words: Peer to Peer ,Projects, Competences, Learning by Development

Introduction

Ever increasing globalisation means that modern universities have to respond more quickly and appropriately to the needs of the learning and business communities. Laurea, a modern multidisciplinary institution, is an example of a flexible, innovative university that has made such a response. This response has included the extensive and integrated use of modern computer technology.

Since 2006 Laurea has shifted its focus from traditional teaching methods to a student centred approach, within its learning processes. The pedagogical framework for learning at Laurea is called 'Learning by Development' (LbD), which is the systematic development of an interaction between training and the reality of working life (Kallioinen, 2008). The objective of this paper is to describe and assess the reality of this LbD development as a learning framework, through one model called Peer to Peer (P2P) as well as how the use of modern technology has assisted the model. The LbD framework is based around 5 competences to be acquired by the learner, ethical, global, networking, innovative and reflective (Rauhala, 2007).

This P2P model was introduced in business studies in August 2008, at the Hyvinkää unit of Laurea, and it is a model where student's learning is linked to development projects that are rooted in the business world. Computer technology plays an important part within many of the projects and within some a somewhat vital role enabling in reality, the accomplishment of the project. The reality of its development includes an academic description and assessment of each of the (LbD) competences. There is then a description of 4 real life P2P projects and an assessment of the reality of the acquisition of these competences by the learner. This is achieved through quantitative empirical research. An anonymous questionnaire was given to all participants involved in the P2P projects during the Autumn semester of 2009. Additionally, there is an assessment of the overall reality of the collaborative learning involvement for all those involved which includes mentors, students and business itself as well as the role played by technology itself.

Learning by Development (LbD)

LbD is Laurea's innovative pedagogical operating model. It was started in 2006 and Laurea had the distinction of being named as a centre of excellence by the Finnish ministry of Education in the same year. In it, the three tasks of Finnish universities of applied sciences – pedagogy, regional development and R&D – are merged into a single process of creating new expertise and knowledge. Learning is creative, and it is based on genuine research. The LbD model defines a learning environment which uses internal and external networks and is in constant interaction with the world of work. LbD seeks to provide research-based solutions to genuine workplace problems that cannot be solved with existing knowledge.

Real life working situations are implemented in practice through research and development projects and initiatives linked to the students' studies, work placements and theses. R&D tasks are used to link studies to innovation work and to turn genuine workplace issues into objects of evaluation. The opportunity to participate as developers in such projects helps students to grow into people who can change established workplace practices, and develop into business leaders.

These development projects are built on the concept of partnership, which implies cooperation between lecturers, experts from business and students. The core of development activities is formed by development teams in which shared expertise is generated. The cooperation between students, lecturers and business people is based on commitment, mutual respect, equality and appreciation of different skills.

The LbD's Five Competences

1. The Ethical Competence

Ethics is a systematic attempt to understand moral concepts, ethical rules and principles, virtues and values. Professional ethics looks at what is right and wrong, obligated and

justified, good and bad, desirable and to be avoided in professional activities. Ethics has both private and social dimensions. In Laurea's ethical competence, the private dimension is embodied in the student's self-reflection. In this process, students examine their own concepts of right and wrong. Professional ethics refers to a professional code, i.e. a number of ethical principles and rules agreed for a specific trade, which direct individual professionals' actions. They include considerations of what is ethically acceptable and advisable when carrying out the trade (Räikkä, Kotkanvirta & Sajama, 1995).

2. The Reflective Competence

The growth of an expert involves rethinking one's own reasoning and actions, evaluating, and researching and developing the area of expertise. Delayed interaction, text-based communication and new ways of thinking about oneself, reflecting on society, communities and circumstances, create some of the necessary conditions for growth.

Reflection is an essential aspect of professional growth and competence (Schön, 1987; Järvinen et al. 2000), directed by human cognitive abilities (Ojanen, 2000, p. 27-28). Critical reflection relates to both defining individual thoughts and experiences, and to identifying and evaluating our reasoning, the concepts that direct our operations, psychological reactions, and the social and cultural processes that affect them. Swift changes in the employment market create a need for self-directed learning, and for individuals to take responsibility for their own management, they need reflective competence – i.e. the ability to critically evaluate their work (Koro, 1992, p. 46).

3. The Network Competence

The network competence has a wide range of things within it such as individual communication skills to organisational networking and network leadership and communication is an essential requirement (Viherä, 2000). The significance of communication competence is particularly marked in today's global networks. Dialogue and interaction are essential resources of the network society (Isaacs, 2001). In order for social and economic structures to become networked, new kinds of skills and attitudes are needed in the network's participants (Castells, 2000; Viherä, 2000).

The ability to express one-self clearly and logically in various verbal communication situations is essential. We not only have to find a suitable verbal expression for our views, but also have to pay attention to the way we say things, to the tone and to nonverbal communication. Situational sensitivity is an essential skill of the communicator, i.e. knowing how to communicate appropriately in each situation (Kansanen, 1997).

4. The Innovation Competence

Change is the only constant in today's society. Change affects people, organisations, knowledge and society as a whole. In an innovation report published by the Finnish National Fund for Research and Development (Sitra, 2005, p. 14), an innovation is defined

as the successful production, application and utilisation of a new idea in an economy or a society. Alasoini, Liffländer, Rouhiainen and Salmenperä (2002) give a definition by which innovations are insights created through a search for new things, research and learning, which are visible in the market as new products or services or ways of producing them. Most simplistically, innovations can be seen as the practical implementation of an idea – i.e., from a company's point of view, the commercialisation of ideas (Lampikoski & Korpelainen, 1997, p. 15). Huiban and Boushina (1998) include the concept of novelty in the term innovation, for example in the capacity of a new characteristic in a product, process or strategy.

5. The Globalisation Competence

The word 'global' refers to things that encompass a whole group of objects, that is comprehensive or complete, or that involves the whole world (Brown, 1993, p. 1011). This is a good working definition when we look at globalisation as the series of events and processes that cause the world to merge into a single, all-encompassing social system (Robertson, 1992, p. 53; Waters, 1995, p. 3). In other words, here 'globalisation' refers to the processes by which phenomena acquire worldwide scope. 'Global' refers to worldwide phenomena and the outcomes of the globalisation process – a fully integrated world.

The P2P programme

Laurea (Hyvinkää), introduced the P2P model of learning in August 2008 in its Business Studies Department. This degree programme model has been based around business projects which are rooted to the reality of working life. The students learning is directly linked to these development projects from the very beginning of their studies. In this unique programme there are no lectures or exams, the students work in teams to solve business problems. Teachers are regarded as "elder colleagues" whose role is to supervise the "younger colleagues" in their development projects. The goal is however to let the students become more independent during their studies and to raise future professionals that will not hesitate to start identifying and solving a problem they face.

The themes and contents of the projects vary, but are all related to business operations, marketing, management, communications or finance. All students participate in international projects as well, and projects are generally related to Russia the Baltic States and European Union countries. Very common themes are export / import, creating marketing plans to a new market, finding new target groups or possibilities for using social media in business operations. Projects are implemented with very different organizations: small and large enterprises, associations or even governmental bodies, but share one similar characteristic, they are all development projects aimed at solving a problem that is important for the organization, which the organization itself has neither time nor knowledge to solve.

The goal of the P2P model is to fill the gap between traditional education and companies' expectations. Companies are encouraged to participate actively in the process and their feedback is valued through the whole process. A P2P-project starts with negotiations with a possible partner company or organization. The projects are usually planned by the teachers and company representatives together, but when possible, the students are encouraged to participate in these meetings. A clear motivational factor for the students in the projects is the project briefing at the beginning of the project and the assignment is given to them by the company representative, not by the teacher. The projects are free of charge to the companies, but quite many company representatives participate actively in the process, and thus give their time and expertise. This participation both increases the motivation of the students, as they see that the project and its success is important to the company and helps the students to create networks and relationships to promote their future careers.

Usually the assignment, given by the company at the beginning of the project is quite vague and in some cases the companies do not even know, what they want. A typical case is a very abstract problem like, for instance, "we need a PR plan". In these cases when students (and teachers) start asking questions, it becomes clear quite soon, that the company itself does not have a clear or defined idea, what should be included. Thus, the very first step for the students is to draw a mind map that clearly presents the theoretical parts included in the project. In order to do this they have to familiarize themselves with the theme in question and read books, academic articles and other research materials. A well built mind map that is approved by the supervising teachers forms a basis at least for the theoretical part of the project, but quite often also for the table of contents for the final project report.

The main challenge for the students lies in combining the theoretical and practical parts of the project. The students search for relevant materials mainly in books and academic journals, but look also for research materials on the Internet. All the theory has to be clearly linked to the project and all the sources need to be clearly marked. The final result of a project is a large report consisting of theoretical and practical part of the project, as well as conclusions and further recommendations. The project results will be presented to the company representative at the end of the project either at P2P office, in the company or by using a negotiation programme on the Internet. By their nature some of the projects are more practice oriented, for example, developing business processes by looking for practical solutions, building Internet-sites. Some other projects are based more on finding information about target groups, new markets, marketing channels or creating handbooks for a company's use.

At the end of each project an evaluation discussion is held and both the process and results are evaluated. Special attention is to be paid on co-operation within the team and also with company representatives and teachers during the project as well as the quality

of the sources used. Evaluation is based on students' self-evaluation, team evaluation and teachers' evaluation.

Usually the problems presented by participating organizations are quite practical. They need for instance recommendations and practical guidelines. For example how to be visible within the social media, finding the reasons for Russian tourists wanting to travel to Finland, and thus creating new methods to attract more customers. Many projects are related to the creation and implementation of marketing plans, finding new customers for a certain hotel or devising an international marketing plan. An organization is perhaps planning entry to the Finnish market and needs to find information about possible target customers and future consumption trends, or a Finnish company operating abroad needs to know, where to find reliable market information and define the position of their most challenging competitors in the market. The reality is that many companies are in need of very practical information that might be difficult to find, for instance a company may need a step-by-step handbook, on how to start importing from another country into their own country.

P2P Project examples

“Starting to Export”.

The project assignment was given by an entrepreneur who specialised in translations and interpretations. The student team created a new business plan, a marketing strategy, brand strategy and a marketing plan. At the same time a new logo and slogan were planned and image marketing studied. During the project new Internet sites were created by the students who planned and made the sites in Finnish, English and Russian.

“Visibility in Social Media”

This project was given by a relatively big and well respected hotel in Finland. The main research question for the project was how the hotel should be visible in the social media. As the hotel was interested in social media for mainly marketing purposes, the information gathered was linked to marketing literature and different company pages were established in different social media channels.

“Planning and Developing a Business”

The project assignment was given by an entrepreneur who specialised in translations and interpretations. The student team created a new business plan, a marketing strategy, brand strategy and a marketing plan. At the same time a new logo and slogan were planned and image marketing studied. During the project new Internet sites were created by the students who planned and made the sites in different languages.

The Role of Technology

In a 2000 study commissioned by the Software and Information Industry Association, Sivín-Kachala and Bialo (2000) reviewed 311 research studies on the effectiveness of

technology on student achievement. Their findings revealed positive and consistent patterns when students were engaged in technology-rich environments, including significant gains and achievement in all subject areas, and improved attitudes toward learning and increased self-esteem.

Technology has often a very important role within the p2p process. At the start there may be an on-line (via computer technology) discussion with all students, teachers and company representatives when the company's` objective for the project is stated and discussed. During the projects the students use the internet for research tasks as well as Microsoft office software to put tasks in diagram or table form and the use of the email, of course allows cheap, quick contact for all players. At the end of the project technology again maybe used to make a presentation on line including discussion, question and answers and feed-back relating to the project. Often companies and students are located in different countries and it is too difficult and expensive for company visits. " Time is money" for any business and technology solves that problem in a real sense during the p2p project process. Additionally, technology has helped in a real sense towards the students learning of parts the competences described earlier in the paper.

Research indicates that computer technology can help support learning and is especially useful in developing the higher-order skills of critical thinking, analysis, and scientific inquiry "by engaging students in authentic, complex tasks within collaborative learning contexts" (Roschelle, Pea, Hoadley, Gordin & Means, 2000)There are indications that within the p2p project process that the computer technology has helped student learning.

For example within the competences computer technology has helped the reflective competence through the ability to record the presentation and questions and consequently for the students to self-reflect on their skills and interaction during the presentation. Academic literature also backs up the globalisation competence that technology brings and helps support the reality of the competence through real global connection. Within the network competence helps improve In particular an individual's communication skills one of the key parts of the networking competence

Research design

The basis of the LbD learning method is around the attainment of 5 core competences for the student which is academically assessed. To assess the attainment of these competences by business students and to evaluate the level of success as precisely as possible, a qualitative approach was pursued. To assess how far the gap recognized between theoretical business education and business reality is being filled interviews were carried out. There were 21 questions in each interview and all of them were open ended questions to collect as much essential material as possible. The questionnaire itself was conducted in an orally, face-to-face and responses were recorded via voice recorder and then typed.

An essential aspect to the research design was the intention to cover as wide a ground as possible. Exchange students from Latvia, Lithuania, Portugal, Russia, and Spain were asked to participate in questionnaire. They had the possibility to indicate clearly and transparently how the P2P system compared to the education system they are currently pursuing in their home Universities.

There were 24 international students who participated in the P2P projects during the Autumn 2012 and 20 (83%) of them were involved in the interview. They came from 11 different foreign Universities so it was a useful questionnaire for finding out the reality of the competences as extensively as possible.

Findings

In relation to the reflective competence, 73% of students, asked how did they got better understanding of rules for making business and contacts, responded that they did improve the overall understanding of fundamental rules through hands-on experience in project work. In addition, the changes include recognition the influence of cultural differences when communicating with entrepreneurs, paying more attention to details, using situation based approach. Others pointed out that they already had sufficient knowledge.

Compared to the ethical competence, the answer to the reflective competence was sought through more questions. Almost half of the students (around 45 %) noted that active usage of English as a primary language for communication has helped them to use it more comfortably and competently. Furthermore, students commented that they have recognised improved teamwork capabilities, adapting theoretical knowledge to practice, as new personal abilities during studies in P2P; only 27 % stated they haven't identified new competencies.

According to students, good reasons for working in a team are workload division, shared responsibility, faster task completion, team may be able to solve a problem that an individual cannot, sharing of new information, and building teamwork skills. On the other hand, working alone offers independence. A person can work on his/hers own pace and be responsible only for own actions and decisions. Additionally, they identified trustworthiness, ease of communication, availability for private consultations, as the main differences between lecturers' in their home universities and project supervisors' in Laurea P2P programme.

When building timetables by themselves students expressed that it was a more comfortable and fluent approach to time management. The downside was the necessary arrangements between team members which doesn't allow student to make very personal schedules. More than half of the students (around 60%) acknowledged that feedback from companies support the development of knowledge by helping them analyse their work, identifying differences between theoretical ideas and reality in the industry. The other half

had insufficient contact or feedback from the companies' representatives. Several students, asked how the exchange period is going to be useful for their studies at home institution or for future career, noted improved multicultural communication skills, learning how to use theoretical knowledge in practice, enhancing teamwork capabilities, preparing oneself for work in a company.

In relation to the network competence, only 45 % of students encountered some misunderstandings or disagreements in their team based project work. The most common problems were: some group members lacked motivation or time to do their parts, language barrier (some Finnish students preferred talking in Finnish to English), cultural differences between students. Almost all students (around 91 %) agreed that information on business communication (cooperating with companies, making agreement, memos, invitations etc.) have helped them to prepare for work in a company as they will already have practised preparation of some documents.

When considering the globalisation competence, the students noted that the differences in learning process in Laurea and their home universities are significant: Laurea offers a practical approach to studying (students work in teams with real companies) is a unique feature in Laurea; flexible schedule (students themselves can decide on their meeting times); the material provided is relevant and contemporary. Students noted that globalisation and cultural differences and enhanced English language skills (100 % of students). These enhanced language skills include: speaking (54 % of students), writing (27 %) and vocabulary (36 %).

In relation to the innovation competence, nearly half of students responded, that they have gained new studying skills and techniques, and new knowledge of information and communication technologies. These consist of: project and group work, writing according to official guidelines, time management, and improved research abilities Google Scholar, Laurea's own ICT technologies (Laurea Live, Intra). Moreover, exchange students were impressed by very modern Laurea's library as it enables students to find books online and minimizes the time needed in order to find specific information. Students have also found self-service in the library and Theseus publication database very useful.

The interview was concluded by a summarising question "what teaching techniques would you like to bring from Laurea P2P model to your home university?" nearly 83 % of students said they would like to introduce the whole P2P model – students working in group projects with companies. The answers also included: flexible schedule, e-library services and student mailing system.

Conclusions

The data collected indicates that all 5 competences to a higher or lower extent were significantly attained by the students who participated in the study. It also indicates that

such an approach to learning brings a positive effect on students' perceptions of the education process and a more practical and business oriented one making them more employable. Additionally, this can be achieved within one semester and by students from different countries which have different educational systems. The analysis clearly shows that the "business reality gap" can be filled through this P2P model which is a good example of Laurea's LbD method. The collaborative learning involved fills the traditional educational gap between universities and businesses enabling new methods, innovations and ideas to be created and developed. Both academically and practically this type of model delivers a more employable graduate with more transferable business skills. It also shows that Laurea University as an organisation is initiating innovative ideas and managing them in a successful way solving a problem between real business life and education.

Modern technology is found to be integral to the model because of the need to connect to those "key" players in the process. This includes on-line discussion with all students, teachers and company representatives, internet for research tasks, and power point presentations to company representatives. The use of such technology in itself also helps the learner acquire some part of the innovative and networking competences in a practical way as well as enhancing student research abilities in relation to the specific objects of projects such as those requiring market research.

Studying in the P2P educational system helps the students to improve their working life competences. Firstly, they will have a better understanding of business life rules and practices, as well as practical working life experience from the projects. Secondly, they will gain business communication skills as well as improve their level in English, both in speaking and writing, as well as acquire a wider vocabulary. Thirdly, the students will learn team and project working skills that these days are a necessity to improve employability

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Teacher attitudes toward own profession: Exploring the impact of ThetaHealing® technique on teacher stress reduction

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Abstract: Rapid changes and uncertainty leave their imprint in form of stress, anxiety, depression... One of markedly stressful professions is for sure teacher profession. Researches have shown that 25-30% of teacher worldwide experience strong stress. Serious consequences are dissatisfaction with work, health issues and emotional exhaustion. Situation is similar also in Croatia. One third of Croatian teachers would like to change profession; they express high level of stress and health problems. All of that has negative impact on student achievement as well. As Radeka and Soric state, if we want to influence teacher motivation and thereby development of modern school, we have to enhance teacher satisfaction with their own work. Challenge is how to do it. In this paper we will present results of pilot-project conducted on group of Croatian primary school teachers with aim to test the impact of ThetaHealing® technique on reduction of stress and change of attitudes toward own profession. That could be one way of the future education of the new generations of teachers.

Key words: teacher, profession, attitudes, stress reduction, ThetaHealing® technique

Importance of beliefs – *We are what we think*

During our infancy we are, according to Steve Biddulph (1997), programmed either to be happy or unhappy. Many parents and other authorities in children's lives, states Biddulph, unwittingly and unconsciously instill negative programs in their children such as: *'You're a hopeless case.'*, *'My God, you're so lazy!'*, *'You are so selfish!'*, *'Stop it, you idiot!'*, *'You fool!'*, and many other. Such messages are *powerfull*. If a children hear them from significant people, such as parents, teachers, and other authority figures, they construct programmes and belief systems in children that remain powerfully impactful determinant throughout their lives.

Bruce H Lipton (2007) also talks about the influence of childhood programming on our lives. Lipton says that our behaviors are simple *stimulus-response* of behavior program which is stored in our subconscious mind. If we constantly heard that we are worthless as a child, these messages are programmed into our subconscious mind and will undermine our best conscious effort to change our life, states Lipton. Affirming Biddulph's statements about programming, Lipton (2007, 135-136) says: „Once we accept the perceptions of others as «truths», *their* perceptions get rooted in our own minds and convert into *our* «truths». “

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The problem lies in the fact that our subconscious mind has no mechanism to determine whether a particular program/belief is right or wrong. It adopts it, because it comes from people (especially parents, teachers) who the child considers to be gods, someone who knows everything, and anything that they say must be true. The effect of beliefs is large. In medicine it is known that the mind can affect the body, and that some people get better when they *believe* (wrongly) that they are receiving medication (*placebo effect*). When the same mind harbors negative suggestions which can harm the health, Lipton says, the negative effects are called *nocebo*. Also "beliefs are contagious" (Lipton 2007, 143); when many people believe in something, the effect of that is greater. Huge is also the power of the messages that parents and teachers transfer to children and in so doing create programs that determine the course of their lives.

Researching the teacher identity, Furlong (2013) found that attitudes, values, beliefs shaped by life history and experiences (as pupils) influence the creation of *teacher identity*, image of person as a teacher, teacher thinking and their practice. Calderhead and Robson (1991), state that beliefs are far more influential in determining teachers' decisions and behaviours than knowledge.

Quoting Marrama (1971), Bilić (2000) states that for success of student's learning and progress are more important teacher's qualities than the knowledge that teacher possess. Data on teacher expectation research have revealed that teachers' expectations appear to be associated with student achievement (e.g. Good 1981; Jussim, 1989; Jussim and Eccles 1992; Trouilloud, Sarrazin, Martinek and Guillet 2002). Student achievement may confirm teacher expectations because these expectations create self-fulfilling prophecies, create perceptual biases, or accurately predict, without influencing, student achievement (Jussim 1989).

Starting from the importance of programmes, beliefs and feelings we collected during our life and stored in our subconscious mind, and starting from the importance of messages that adults, with accent on teachers, are sending to children we launched a search on possible way to make adults (teachers) aware of importance of their words and deeds and to help them to solve negative programmes, beliefs and feelings that are inhibiting them in their personal and professional life. Maybe we could say that the leading question was – how to raise happy children. Especially in this time of rapid changes and uncertainty that leave their imprint in form of stress, anxiety, depression... and make teacher everyday even more difficult. We know that one of markedly stressful professions is for sure teacher profession. Researches have shown that 25-30% of teacher worldwide experience strong stress. Serious consequences are dissatisfaction with work, health issues and emotional exhaustion. Situation is similar also in Croatia. One third of Croatian teachers would like to change profession; they express high level of stress and health problems. All of that has negative impact on student achievement as well. As Radeka and Soric (2006) state, if we

want to influence teacher motivation and thereby development of modern school, we have to enhance teacher satisfaction with their own work. Challenge is how to do it.

Searching the answer on this – how to do it – we have found many techniques. We have found out that mindfulness is practiced more and more and has positive impact on, i. a. stress reduction, finding a purpose in life, improvement of concentration and better achievement in many areas of life. One of the techniques that made an impact on us and showed good results in personal usage was ThetaHealing® technique. We wanted to test it on teacher population, find a way to measure impact of this technique, to see if this technique has validity to be introduced as helpful tool for teacher everyday professional assistance. In this paper we will present results of pilot-project conducted on group of Croatian primary school teachers with aim to test the impact of ThetaHealing® technique on reduction of stress and change of attitudes toward own profession. That could be one way of the future education of the new generations of teachers. But first, let's say, in short, something about ThetaHealing® technique.

ThetaHealing® Technique

Taking into account the importance of beliefs and emotions, we became interested in the question of whether it is possible to establish evidentiary connections between negative programs, beliefs and feelings. More specifically, we are interested in applications in situations where teachers are under a stress, feel exhausted and cope with negative attitudes and beliefs about own profession in order to improve their performance. In reviewing the literature, we have found one technique, ThetaHealing®, claimed by its author, Vianna Stibal to facilitate rapid and permanent change in counterproductive programs, beliefs and feelings.

ThetaHealing® technique works on the principle of changing programmes, beliefs and feelings with the aim of supporting personal development and the improvement of the quality of life. The two most important areas in ThetaHealing® are *belief work* and *feeling work*. *Belief work* (Stibal 2009, 2010) enables a person by fostering the ability to remove and replace negative programs and beliefs systems with positive beneficial ones.

Everything what we do is regulated with different brain waves frequencies (beta, alpha, theta, delta, and gamma). Certain brain frequencies (specially alpha, theta and theta-gamma state) reduce stress and anxiousness, enable deep physical relaxation and mental clarity, increase verbal skills and creative thinking, synchronize both brain hemispheres, reduce pain, stimulate release of endorphin etc. Stibal (2010) claims that by bringing an individual into *theta state* (deep state of relaxation theta brain waves are dominating) it is possible in amazingly short period of time to change programmes, beliefs and/or feelings which block a person and interfere with its ability to have a healthy and fulfilling life. Unlike hypnosis and dream state when a person is not conscious of the fact being in theta state, ThetaHealing® brings a person into theta state while completely conscious. The human

brain is incredibly complex and powerful. Stibal (2009, 10-11) states that changes of programs and feelings are based on the power of controlled and focused *thought*.

Pilot-project

Aims, objectives, hypotheses

Aim of this pilot-project was to explore the impact of ThetaHealing® technique on teacher stress reduction and on change of teacher negative attitudes and beliefs about their profession. Objectives were to test level of stress (burn-out) they experience on their job and to teacher attitudes and beliefs toward own profession regarding to four categories (job, personal, pupils and colleagues). Hypotheses were: 1) teacher level of stress (burn-out) is high; 2) teacher have negative attitudes and beliefs about their profession; 3) after implementation of ThetaHealing® technique level of stress will be lower; 4) after implementation of ThetaHealing® technique teacher attitudes and beliefs about their profession will be more positive; 5) differences between groups regarding the frequencies of meetings are not expected; 6) differences regarding the art of measurement are expected.

Methodology

Pilot-project was conducted with two groups of primary school teachers, 11 examinees in each group. In order to assure anonymity, each examinee got code-names (e.g. C-1, K-1). We had five meetings with each group. With first group we had meetings during one month, once a week (May 2013), and with second group we had meetings during one week, every day (June 2013). First and last meeting lasted for three hours, other meetings lasted for two hours.

In order to measure level of stress (burn-out) teacher experience on their job we used Maslach Burnout Inventory (MBI). In order to test teacher attitudes and beliefs toward own profession we designed a questionnaire that tested teacher attitudes and beliefs toward own profession regarding to four categories – job (15 statements), personal (27 statements), pupils (16 statements) and colleagues 6 (statements). Measurements were performed in two ways – self-assessment (s) and muscle testing (m), with answers *yes* and *no*, and in two measurement points – before the intervention and after the intervention.

For the purpose of results analysis we recoded the positive statements – in category job statements 1, 12, 13, 14; in category personal statements 5 and 18 and in category pupils statements 3, 4, 12, 13, 15, 16. The total score on each subscale is calculated as the sum of 'Yes' answers on each statement – a higher score indicates a more negative attitudes and belief about each statement.

Independent variables were groups (C, K), self-assessment and muscle testing (with possible answers *yes* and *no*).

Data were analysed with Statistical program for social sciences (SPSS, 20.0.). Data were processed using the method of univariate (frequencies) and bivariate statistics (t-test and McNemar test).

In data processing we analysed data according to the following areas: attitudes and beliefs about job, personal attitudes and beliefs, attitudes and beliefs about pupils and attitudes and beliefs about colleagues. We compared data regarding mode of measurement and regarding the measurement point.

Results

Results of testing with Maslach Burnout Inventory (MBI) showed that our examinees don't experience burn-out on their job. That changed a flow of our project because we had to reject the first hypothesis (*teacher level of stress (burn-out) is high*) and consequently we couldn't test the third hypothesis (*after implementation of ThetaHealing® technique level of stress will be lower*).

Our second hypothesis was that *teachers have negative attitudes and beliefs about their profession*. With objective to test teacher attitudes and beliefs toward own profession we constructed a questionnaire divided into four categories (job, personal, pupils and colleagues). Fourth hypothesis was that *after implementation of ThetaHealing® technique teacher attitudes and beliefs about their profession will be more positive*. In Table 1 and in following text we present frequencies for each statement in each category regarding the art and point of measurement with accent on negative attitudes and beliefs and changes that happend after implementation of ThetaHealing® technique.

		1st measurement point				2nd measurement point			
		S		M		S		M	
	Job	Yes	No	Yes	No	Yes	No	Yes	No
1	I am responsible for my job	20	2	20	2	19	2	14	7
2	My job is difficult	16	6	16	6	3	18	1	20
3	My job makes me very tired	6	16	6	16	0	21	1	20
4	I always have difficult classes	0	21	0	21	0	21	1	20
5	My lectures are boring	5	17	5	17	0	21	1	20
6	I am forced to do my job	2	20	2	20	1	20	3	18
7	I have to find excuse for poor teaching	7	15	7	15	5	16	3	18
8	My lectures upset me	0	22	0	22	1	20	1	20
9	I am a bad teacher	0	22	0	22	0	21	0	21
10	Lectures are the worst kind of job	1	21	1	21	1	20	1	20
11	My job stress me out	10	12	10	12	2	18	1	20
12	I enjoy my work	19	3	19	3	20	1	19	2
13	I know how to do my job with ease	15	7	15	7	19	2	19	2
14	I know how to balance my work and my private life	15	7	15	7	19	2	19	2
15	I am a victim of my job	1	21	1	21	0	21	2	19

Personal									
1	I will be alone if I change	2	20	2	20	0	21	1	20
2	I hate change	4	18	4	18	1	20	1	20
3	Changes frustrate me	3	19	3	19	1	20	0	21
4	I have resistance to learning	2	20	2	20	2	19	1	20
5	I am respected	19	2	19	2	21	0	17	4
6	I am unable to be authoritative	6	16	6	16	0	21	1	20
7	I have to be attacked	0	22	0	22	0	21	0	21
8	I have to learn through painful experiences	4	18	4	18	0	21	1	20
9	I hate public speaking	11	11	11	11	8	13	4	17
10	I am afraid the truth about me	6	16	6	16	2	19	0	21
11	I hate when someone preach me	15	7	15	7	12	9	6	15
12	I don't accept the opinions of others	1	21	1	21	3	18	2	19
13	I don't hear other	1	21	1	21	0	21	1	20
14	Other don't hear me	4	17	4	17	1	20	2	19
15	I have to constantly prove	9	13	9	13	3	18	0	21
16	I have to give more than I receive	12	10	12	10	3	18	5	16
17	I hate being criticized	10	12	10	12	10	11	5	16
18	I accept criticisms	18	4	18	4	18	3	15	6
19	I'm hiding behind other	3	19	3	19	0	21	0	21
20	I have to go through pain to learn how to control my emotions	6	16	6	16	2	19	3	18
21	It is difficult to control myself	6	16	6	16	2	19	2	19
22	I work for nothing	3	19	3	19	1	20	0	21
23	It is wrong to have abundance of money	1	21	1	21	1	20	1	20
24	I am afraid that my job will grow too much	6	16	6	16	1	20	1	20
25	I am afraid of having too many tasks to handle	9	13	9	13	2	19	2	19
26	I am afraid of losing my private life	5	17	5	17	1	21	0	21
27	I am afraid of having difficult pupils	3	19	3	19	1	20	0	21
Pupils									
1	Pupils frustrate me	2	20	2	20	0	20	0	21
2	I am afraid of pupils	2	20	2	20	0	20	0	21
3	I know how to communicate with pupils	21	1	21	1	20	0	17	4
4	I understand pupils	22	0	22	0	20	0	21	0
5	Pupils don't accept me	4	18	4	18	2	18	4	17
6	I am insecure in front of my pupils	1	21	1	21	0	20	1	20
7	My teaching is difficult to pupils	2	20	2	20	1	19	1	20
8	Pupils run away from me	0	22	0	22	0	20	0	21
9	My subject is incomprehensible to pupils	1	20	1	20	0	20	0	21
10	Pupils frustrate me with their ignorance	6	16	6	16	4	16	2	19
11	Pupils don't respect me	1	21	1	21	0	20	1	20
12	I know how to give attention to pupils	22	0	22	0	20	0	21	0
13	I know how it feels like to have pupils that give something in return	20	2	20	2	19	1	19	1
14	I have to make compromises with pupils	17	5	17	5	10	10	5	16

15	I know how it feels like to be respected by pupils	22	0	22	0	20	0	20	1
16	I am patient in work with pupils	21	1	21	1	20	0	19	2
Colleagues									
1	I am afraid my colleagues will attack me if I reach my goal	4	16	4	16	0	20	0	21
2	My colleagues are my enemies	0	20	0	20	0	20	0	21
3	I have to be attacked by my colleagues because I can handle it	1	19	1	19	0	20	0	21
4	I have to back off in order to avoid having my colleagues attack me	2	18	2	18	0	20	1	20
5	I have to have my colleagues attack me in order to improve myself	2	18	2	18	0	20	0	21
6	I am vulnerable to my colleagues pressure	14	6	14	6	5	15	2	19

Table 1: Frequencies of answers regarding the art and point of measurement

With McNemar's test we checked whether the proportions of „yes“ answers differ in 1st and 2nd measurement point for self-assessment on individual particles. Significant differences we got on following particles:

- My job is difficult (80% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- My job stress me out (78% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- I am unable to be authoritative (100% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- I have to give more than I receive (82% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point, and 10% teachers that answered „no“ in 1st measurement point, answered „yes“ in 2nd measurement point);
- I am afraid of having too many tasks to handle (78% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- I am vulnerable to my colleagues pressure (62% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point).

With McNemar's test we checked whether the proportions of „yes“ answers differ in 1st and 2nd measurement point for muscle testing on individual particles. Significant differences we got on following particles:

- My job is difficult (92% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- My job makes me very tired (100% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point, and 11% teachers

that answered „no“ in 1st measurement point, answered „yes“ in 2nd measurement point);

- My job stress me out (88% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- I know how to do my job with ease (75% teachers that answered „no“ in 1st measurement point, answered „yes“ in 2nd measurement point);
- I am unable to be authoritative (100% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point, and 8% teachers that answered „no“ in 1st measurement point, answered „yes“ in 2nd measurement point)
- I am afraid the truth about me (100% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- I have to constantly prove (100% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- I am afraid that my job will grow too much (100% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point, and 8% teachers that answered „no“ in 1st measurement point, answered „yes“ in 2nd measurement point);
- I am afraid of losing my private life (100% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point);
- I have to make compromises with pupils (67% teachers that answered „yes“ in 1st measurement point, answered „no“ in 2nd measurement point).

To check whether the examinees from different groups differ, we conducted a series of t-tests for each of the subscales and for both modes of measurement – self-assessment and muscle testing and in both measurement points. The results of t-tests showed that the examinees don't differ on any of points, and the further analysis were made on both groups (all examinees) together (see Table 2). These results proved our fifth hypothesis (*differences between groups regarding the frequencies of meetings are not expected*).

domain	group	N	1st measurement point			2nd measurement point		
			M	SD	t	M	SD	t
s_job	C	11	2,45	2,115	1,257	,82	,751	,454
	K	11	3,63	2,292		1,00	1,095	
s_personal	C	11	7,55	4,180	,465	2,55	1,864	,263
	K	11	8,27	3,069		2,82	2,892	
s_pupils	C	11	1,91	1,814	,248	,91	,944	,491
	K	11	1,73	1,618		,73	,786	
s_colleagues	C	11	1,27	1,421	,904	,27	,467	,488
	K	11	,81	,874		,18	,405	
m_job	C	11	4,27	2,054	,103	1,09	,944	,658
	K	11	4,18	2,089		1,45	1,572	
m_personal	C	11	7,91	3,618	,208	2,18	1,601	,093
	K	11	8,27	4,519		2,27	2,831	
m_pupils	C	11	3,18	2,316	,821	,73	,905	,924
	K	11	2,45	1,809		1,27	1,737	
m_colleagues	C	11	1,64	1,567	,772	,09	,301	,598
	K	11	1,18	1,168		,18	,405	

Table 2: Differences regarding the groups

To check whether the beliefs differ in same point depending on the art of measurement it was carried out a series of t-tests for dependent samples (see Table 3). Results show that attitudes and beliefs about job differ in both measurement points in a way that results from muscle testing indicate more negative beliefs. To that in second measurement point attitudes and beliefs about pupils are more positive.

domain	1st measurement point			2nd measurement point		
	M	SD	t	M	SD	t
s_job	3,05	2,236	2,689*	,90	,921	2,160*
m_job	4,23	2,022		1,27	1,279	
s_personal	7,91	3,598	,210	2,68	2,378	,717
m_personal	8,09	3,999		2,23	2,245	
s_pupils	1,81	1,680	1,817	,82	,853	,526
m_pupils	2,81	2,062		1,00	1,380	
s_colleagues	1,05	1,174	1,359	,14	,351	1,000
m_colleagues	1,41	1,368		,23	,429	

Legend: *p<.05

Table 3: Differences according to art of measurement

We checked with McNemar's test whether the proportions of „yes“ answers differ in self-assessment and in muscle testing on individual particles (in 1st measurement point). Significant differences we got on following particles:

- I am responsible for my job (30% teachers that answered „yes“ in self-assessment, answered „no“ in muscle testing 2nd measurement point);
- My job makes me very tired (50% teachers that answered „no“ in self-assessment, answered „yes“ in muscle testing, and 17% teachers that answered „yes“ in self-assessment, answered „no“ in muscle testing 2nd measurement point).

We checked with McNemar's test whether the proportions of „yes“ answers differ in self-assessment and in muscle testing on individual particles (in 2nd measurement point). On any of the particles we haven't found significant difference.

To check whether the estimates in two time points (pre-post) for the same art of measurement differs it was carried out a series of t-tests for dependent measures. Table 4 shows that the differences are statistically significant for all methods of measurement in the direction of higher results, that is of more negative attitudes and beliefs in the first point. The results show that the intervention reduced the negative attitudes and beliefs about job, pupils and colleagues, and personal beliefs.

domain	Self-asesment			Muscle testing		
	M	SD	t	M	SD	t
job_before	3,05	2,236	4,182**	4,23	2,022	7,761**
job_after	,91	,921		1,27	1,279	
personal_before	7,91	3,598	5,780**	8,09	3,999	6,460**
personal_after	2,68	2,378		2,23	2,245	
pupils_before	1,82	1,680	2,872**	2,82	2,062	4,389**
pupils_after	,82	,853		1,00	1,380	
colleagues_before	1,05	1,174	3,498**	1,41	1,368	4,018**
colleagues_after	,23	,429		,14	,352	

Legend: **p<.01

Table 4: Differences according to point of measurement

Interventions with ThetaHealing® technique lowered negative attitudes and beliefs that we identified at first measurement point. These results proved our fourth hypothesis (*after implementation of ThetaHealing® technique teacher attitudes and beliefs about their profession will be more positive*).

Learning points and further steps

What we have learned out of this pilot-project? Although the MBI test didn't identified burn-out at our examinees, they reported that from their own, personal perspective they feel exhausted and under stress. After the project they reported that they feel more energized, more self-confident and more enthusiastic about their own work. We couldn't explore the impact of ThetaHealing® technique on teacher stress reduction but we explored the impact of this technique on change of teacher negative attitudes and beliefs toward own profession. In this point this technique showed good results.

Teacher have some negative attitudes and beliefs toward own profession, primary regarding own job, pupils and colleagues. But, it is possible to change (teacher) negative attitudes and beliefs toward own profession within short period of time and frequency of interventions is not important. We have learned that we have to adjust questionnaire we use. Results showed that some statements are not responding to primary school teachers.

Our further step is to plan and conduct research on bigger sample and include secondary school teachers. Also, we have to introduce a control group. Our aim was to test

ThetaHealing® technique, to see if there is basis to plan a research with wider scope. These preliminary results showed that there is justification for such research and our further steps are to organise and implement research on statistically significant population.

Our assumption is that implementation of ThetaHealing® technique can improve teachers wellbeing, self-esteem and personal and professional satisfaction. Special benefit of this research and technique we see in fact that this technique brings fast results, makes real changes and can be usefull in professional development of teachers. That is something that teachers, in Croatia, need. Positive feedback from examinees is additional encouragement.

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Promoting Global Citizenship Education through Digital Storytelling

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Abstract: This paper presents results from the RIGHTS project (pRomotIng Global citizensHip education Through digital Storytelling). The project (2011-2013) was funded with support of the European Commission under the Lifelong Learning Programme – Sub-programme Comenius. It addresses secondary schools in the seven partner countries. The aim of the project was to promote Education for Global Citizenship (EGC) by enhancing interactive teaching in secondary schools in Europe. Scholars argue that civic education has to change from teaching citizenship to learning democracy and that school should become an arena for dialog and discussion between students. A basic assumption is that allowing students to have a voice and to actively participate in democracy is a powerful way to support their development to become active citizens. The main focus is to promote teachers' and students' ability to *reimagine* and *reinvent democracy* by using digital storytelling as the main approach in a global citizenship education.

Keywords: Citizenship Education, Democracy, Digital Storytelling

Introduction

The global trends of social and political changes have implications for democracy and citizenship. This has led to an increasing focus on how school prepares students for a multicultural and inhomogeneous society. The European Commission selected the year 2013 as the European Year of Citizens and the Council of Europe indicates that the primary goal of Democratic Citizenship Education is "not just equipping learners with knowledge, understanding and skills, but also empowering them with the readiness to take action in society in the defence and promotion of human rights, democracy and the rule of law" (Council of Europe 2010). Democracy as a form of government faces many challenges caused by globalisation, immigration and the implications of new media. In particular new media has opened up for new patterns of participation in democracy. Concerns about the future of the democracy have led to a worldwide interest in issues pertaining to education and citizenship, from the views of both the educational institutions as well as from the politicians. There are worries about the levels of apathy, ignorance and cynicism when it comes to public life, especially amongst the younger generation. It is claimed that the role of the people is being transformed from that of citizens, to that of consumers (Buckingham 2000; Østerud 2003). A key question is therefore how to include young people into politics and how to create an education that supports their development to become active citizens. Citizenship education is being criticized for being formal, irrelevant and meaningless (Solhaug 2013). Scholars argue that civic/citizenship can be characterised as voter education in the sense that we socialise our students into voting in

particular. In Europe there is a great variety of civic/citizenship education but much of this education is *about* political systems, *about* democracy, *about* formalities and above all *about* voting (Biesta 2011; Solhaug 2013). It could be claimed that the education may be characterised by socialising the students into the current political order. There is a need of new thoughts and methods when it comes to civic/citizenship education.

The RIGHTS project tries to echo the Millennium Development Goals objectives (United Nations Development Program 2000). But first and foremost the project promotes the teachers and students ability to *reimagine* and *reinvent democracy* through the implementation of an innovative didactic methodology by using digital storytelling as the main method in a global citizenship education.

RIGHTS is a two-year Comenius project co-funded by the EU Lifelong Learning Program which started in October 2011 and finished in September 2013. Global Citizenship Education is meant to be a comprehensive approach to the different challenges of the present globalized world, with an emphasis on individual and social responsibility and consequent capacity of action. New generations should become innovative agents of change and social transformation! Therefore we are in need of teachers who are able to promote an active global citizenship.

The project has developed an e-learning course for teachers, focusing on Education for Global Citizenship issues and digital storytelling techniques. The project's specific target groups are secondary school teachers and students in the seven partner countries involved in the initiative: Italy, Bulgaria, Spain, Portugal, Turkey, Switzerland and Norway. The main objective of the project is to implement an innovative didactic methodology that can help promote the Education for Global Citizenship (EGC) through the use of Digital Storytelling (DS), by enhancing interactive teaching and learning across countries and cultures in secondary schools in Europe. The innovative aspect of the RIGHTS didactic methodology is both related to the use of the digital storytelling approach, and to the contents related to Global citizenship education issues

Global citizenship education

Citizenship education is educational efforts to make democracy viable and stable by qualifying citizens for participation in democracy (Solhaug 2013). Being a citizen is about having the opportunity to actively participate in society and being influential in political processes. The citizenship perspective recognizes the fact that young people are important members of society in their youth, not only when they are grown up. The political dimension of citizenship, demands a wide understanding of politics. Politics include traditional political activities but more important in this context are diverse activities that have political or social agendas or consequences (Ministry of Children Equality and Social Inclusion 2011). In the traditional way of understanding education and citizenship -

citizenship is often conceived as outcome, and this places young people in the problematic position of not-yet-being-a-citizen (Biesta and Lawy 2006). Young people are often seen as 'citizens in the making'.

Several definitions of Global Education or Educations for Democratic Citizenship can be found at a European level, while Global Citizenship Education (GCE) is a relatively new term, which still can't be found in European regulations or official documents.

As highlighted in the RIGHTS project research phase, Global Citizenship Education does not have an official definition. It is a practice, which has been developed in Europe, and in several non-European countries starting from the need to grapple with some common challenges. These include the changing international social and political situation, the globalization of the economy, information and transportation, the increase in migratory flows to richer countries, which has brought about the growth of an increasingly multi-cultural society, the economic crises, and the problems linked to climate change, to name only a few.

At the European institutional level the North-South Centre¹⁶, provides this definition of Global Education: "Global education is understood to encompass Development Education, Human Rights Education, Education for Sustainability, Education for Peace and Conflict Prevention and Intercultural Education; being the global dimension of Education for Citizenship", therefore it provides knowledge about universal concepts of humanity and about communalities and different lifestyles, cultures, religions and generations.

Educating for global citizenship has become a shared goal of educators and educational institutions interested in expanding their own and their students' understanding of what it means to claim or to have citizenship in the twenty-first century. A strong message in this direction was given by the UN Secretary General, who launched the Education First campaign in September 2012: one of the priorities of this campaign is promoting global citizenship. Global education is intertwined with the contemporary movements that push for curriculum innovation in different countries that encourage a more flexible and open perspective by applying new content and using active methods and new resources.

Global education is not just concerned with different perspectives on globalised themes and what you teach and learn about them. It is also concerned about how you teach and learn and the contextual conditions in which you teach and learn. In fact there is a necessary unity between the content, form and context in which the learning process

¹⁶ North-South Center, officially named the European Centre for Global Interdependence and Solidarity, is a Partial Agreement of the Council of Europe whose mandate is to provide a framework for European co-operation designed to heighten public awareness of global interdependence issues and to promote policies of solidarity complying with the Council of Europe's aims and principles, respect for human rights, democracy and social cohesion.

takes place¹⁷. In a global education learning process students and educators go deeper into the roots and causes of events and developments and share ideas on possible solutions in a dynamic exercise of observation, analysis, reflection and exchange of information that creates a new circle of knowledge and interests. The content is therefore a result of a constant interrelation between abstract knowledge of theory and concrete experience of everyday life. According to Solhaug (Solhaug 2012), there is an international trend in teaching and research in the social sciences; the criticism of the formal facts and knowledge orientation. This orientation is partly irrelevant and the effect on the student engagement and participation is debatable.

Solhaug asserts that school has some options in civic learning; they could turn their focus towards the current political problems, the current conflicts in their countries and try to encourage students in their political participation. School should become an arena for dialog and discussion between the students. This is particularly important in democracy, and also a way for students to learn to make themselves political effective (Solhaug, 2006). The global citizenship education should increase the student's knowledge about the possibilities they have to influence society, and to enable them to participate and influence political processes both through media and through "real-life" participation.

Biesta and Lavvy (Biesta and Lawy 2006) argue that there needs to be a shift from teaching citizenship to learning democracy. The key question is how do young people actually learn democratic citizenship and how can teachers develop this? According to Biesta and Lavvy democracy is not confined to the sphere of political decision-making but extends to participation in the 'construction, maintenance and transformation' of all forms of social and political life. The focus on learning democracy allows us to show the ways in which this learning is situated in the unfolding lives of young people. It also allows us to make clear how these lives are involved in a wider cultural, social, political and economic order. It is ultimately this wider context that provides opportunities for young people to be and to become democratic citizens and to learn democratic citizenship.

In this context we can see the pivotal role of Digital storytelling, which is an important media tool for involving people. It belongs to media education that is directly related to global education. In global education an educator using the media may encourage learners to become aware of global problems, to be a critical audience for any form of given information, to deconstruct stereotypes, to develop a culture of understanding and to be active citizens. Learners using the media in a global education learning process can be active researchers of information and collaborative participants in a process towards discovering knowledge. Using the media is a challenging way not only of getting, but also of spreading information from the group to the local or global community, if the group goes

17 See the aims of global education in "Global Education Guidelines – a handbook for educators to understand and implement global education-", North-South Centre of the Council of Europe, Lisbon, update version 2010, pp. 18, and 19.

on from the learning activity to action in the real life or in cyber space. The spread of social media is described as a new infrastructure for participation and mobilization, which promotes adolescent's power and influence. There is an increased importance of digital citizenship of youth. Therefore it has become more important than before to promote the development of the student's "voices". Biesta and Lawy (Biesta and Lawy 2006) emphasizes the importance of teaching children and adolescents to speak with their own voice, so that they can break into the world and respond, and thereby be constituted as responsible subjects. Digital storytelling promotes development of the student's voices and has the potential to enhance the student's as active citizens.

Learning democracy is about letting the children and adolescents experience democracy, and through the experiences learn and understand how to navigate in a democracy and thorough that also grasp the notion of the common good like hospitals, libraries, music schools etc. This is a precondition to understand the notion of democracy and consequently to be an active citizen.

If learning democracy is situated in the lives of young people, then citizenship education should also facilitate a critical examination of the actual conditions of young people's citizenship. David Buckingham's research (Buckingham 2000; 2003) shows that young people are mostly alienated, or at least disconnected, from traditional forms of politics and civic participation. Children's' and adolescent's voices are often not heard. They have achieved status as consumers, but to a very limited degree status as citizens. This means that we have to include children and adolescents in the democracy. With other words; there is a need to democratize democracy!

Educational uses of digital storytelling

Digital Storytelling is the practice of using digital technologies to tell a short story (Robin 2008). According to the CDS - Center for Digital Storytelling (Lambert 2006), a digital story is a short, first person video-narrative created by combining recorded voice, still and moving images, and music or other sounds. DST has proven to be a powerful and effective learning tool in stimulating creativity and critical thinking through the combination of the ancient art of telling stories with different digital tools. Over the last fifteen years DST has been applied to many different contexts and has encountered a wide range of possibilities. CDS's experience has largely demonstrated that the project-based learning within the context of personal narrative greatly accelerates the learning process of multimedia technologies. Such projects not only reinforce writing and research skills, but help students to work together, critique one another's work through discussion and help students gain 21st century literacy skills by utilizing today's latest technologies. In doing so, educators are not only engaging their students on multiple levels, but also preparing them with the skills for the world beyond their secondary school education. By teaching to apply the digital techniques to standard writing techniques such as narrative and

screenplay, Digital storytelling allows both teachers and students to approach different subjects in a creative and interactive way and at the same time to develop different transversal competences for lifelong learning such as digital competences, social and civic competences and cultural awareness and expression.

The RIGHTS Project

The RIGHTS project wants to promote the Education for Global Citizenship (EGC) in secondary schools in Europe through the use of Digital Storytelling (DS). EGC is a comprehensive approach to the challenges of the present globalized world, with an emphasis on individual and social responsibility and consequent capacity of action. It points out to the empowering of the individual, not only to the transmission of notions.

RIGHTS will allow both teachers and students to approach EGC in a creative and interactive way and at the same time to develop transversal key competences such as civic competences, cultural awareness and digital competences. RIGHTS didactic methodology has been tested through the delivery of an online training course to teachers, and secondly through the organization of workshops with students and teachers. The teachers have been supported by facilitators in producing their personal digital stories.

The Research

The RIGHTS consortium carried out a research activity with the aim to compare the experiences/expectations of seven European partner countries around Digital Storytelling (DS) and Global Citizenship Education (GCE). The idea was to help to map out the main methods guiding GCE in the 7 countries involved, with a focus on the activities of those schools attended by 12 to 16 year-old students. The research activities were mainly analysis of the national documentation, interviews with secondary school teachers and Facebook page experiment.

The research reveals that none of the countries have a specific teaching called "Global Citizenship Education". However, all the countries provide for one or more variously named types of teaching which refer to teaching about citizenship and human rights. Furthermore, it can be stated that there is a clear the need to give citizen education a global scope.

According to the researchers' analysis, the use of the DST method is still in its initial stages. Although in a couple of the involved countries some projects, entirely revolving around DST as the core of students and teachers' educational activities, are allegedly being carried out. In other countries DST is mainly used in a synergy with other, more traditional educational and teaching activities. More precisely, DST is part of an education scheme, a useful tool in the introduction and/or final stages of workshops or learning activities actually based on other techniques and tools. It is broadly acknowledged that the potential of DST should be developed in several and diverse educational contexts and

according to different perspectives, due to its strong impact on adolescents, youth, and, last but not least, children, who were actually born in a highly technological social context.

The e-course

The RIGHTS consortium designed an e-course addressed to school teachers focusing on Global Citizenship Education and the use of Digital Storytelling as learning tool in secondary schools. The course requires participants to be active at least a total of 30 hours on theoretical and practical aspects during a 3 months period. It also includes the development of a digital story produced by the teacher. The course prepares the teacher to conduct workshops where lower secondary students create digital stories connected to global citizenship.

The e-course is implemented on an e-learning platform designed for interaction between students. An important part of the Digital Storytelling method is the story circle process where storytellers share story ideas to get feedback and help each other to design a story that communicates well (Lambert 2009).

The RIGHTS E-course is based on approximately 150 pages of educational material comprising a diversity of interactive individual and group activities with coached assignments, a virtual library and a glossary. It is structured in a total of 7 sequential modules. A set of initial modules introduce the course and Global Citizenship Education, followed by modules focusing the competences needed to address GCE in active ways and ending with the production of a Digital Story on the issues of Democracy and Citizenship.

The e-learning course is based on a didactic methodology for teaching that differs from traditional teaching. The most significant difference has to do with the relationship between teacher and student. They are both challenged to create a personal story based on their experiences or views on global citizenship issues. In this situation there is no such thing as a definitive answer. Just as in democracy, each individual is given a voice expressed through a digital story. The central idea is to turn the classroom into an arena for democratic practice where teacher and students are put on equal footing as active citizens. This is in line with what scientists believe is a good way to teach citizenship (Solhaug 2013).

A second principal in the didactic methodology is to encourage the students to engage in what they experience as *a burning question*. A burning question is something that students perceive as unfair or problematic and that they have a strong commitment to. A burning question needs to be vital and focused, either in a specific local context such as a community or a school, or in a wider context. Kathrine Winkelhorn, co-producer of the e-learning course, puts it this way (Winkelhorn 2012):

A burning question aims at improving fundamental social and democratic conditions for certain groups of citizens – children, teenagers, young people, women or old people.

Traffic, environment, gender, pollution, garbage and unemployment are typical issues to deal with.

The course aims at giving the teachers knowledge and skills in teaching methods that can facilitate students' engagement in democracy, thereby concrete projects being carried out in schools with students concerning developing and reinventing democracy. We want teachers to recognize that citizenship is not something you achieve but something you learn through democratic practice. Democracy depends on participation and that a vivid democracy needs to be rooted within the community, and not least that the individual is living in a contextualized and a connected world.

The RIGHTS E-course appeals to the intrinsic motivation of secondary school teachers and students to learn, to do a better job, and to enjoy doing it. The web-based learning environment is designed to be as interactive as possible, taking into account that interactivity is not simply clicking on buttons, watching animations or video, or listening to sound clips. Frequent learning checks and appropriate and timely feedback by tutors are important motivational elements.

The Experimentation

In order to effectively test and assess the project's didactic methodology an experimentation action was carried out in the secondary schools of all the seven partner countries. The experimentation is split in two main parts. The first part was the e-learning course and the second part was a practical session: upon completion of the online course, teachers began using their newly acquired skills and knowledge by conducting workshops with their own students. Each workshop is dimensioned to 24 hours in class introducing the main aspects of GCE and digital storytelling, from script writing, narrative techniques, voice recording, images, acquiring transversal skills (such as writing and verbal skills, technical skills, creativity, critical thinking, teambuilding etc.). To give the students an additional motivation, a contest was arranged to crown the best story.

Results

The main project results are the e-course for teachers and the digital stories on Global Citizenship produced by teachers and students.

Course participation and satisfaction

142 teachers enrolled in the e-course. However, only 83 teachers completed the course successfully. Most of the teachers were well educated with practical orientation, specialised in English language, ICT knowledge and humanitarian subjects. The most active and motivated teachers from Turkey, Bulgaria, Portugal came from small towns and villages that had less opportunities to be involved in training programs. When we look into the learning platform we find that the level of course activity differs significantly among countries. One thing is that the collaboration between teachers attending the course is

small or nearly absent. We also encouraged teachers to share story ideas and finished stories on the platform. Apparently this type of collaboration did not appeal to the teachers.

However, most of the participants who attended the digital course appraised it as very useful, practical oriented that gave them opportunity to enhance their professional knowledge and have exchanges with other colleagues from other countries. From the evaluation of the project it appears that some teachers found the course too extensive and comprehensive. Others say that they were familiar with parts of the course so they decided not to complete all modules. Although many teachers did not complete the course, there were still many who conducted workshops with their students.

Digital stories

A total of 150 digital stories were produced. Many students made individual stories, but there are also a considerable number of stories made by two or more students together. Digital Storytelling is essentially a personal genre encouraging each individual to reflect on his/her own experiences, opinions and feelings. However, teachers often find it more appropriate to organize such learning processes as group work.

The digital stories produced by students were evaluated by a team composed by researchers from all partners. Furthermore the stories were published on the project Facebook page to allow all students and a wider audience to express their views and vote on the stories. The Facebook evaluation was part wider evaluation process based on the rules defined by the project partners (RIGHTS project 2013b). Students could vote only for stories produced by their peers in a different European country. The evaluation followed four dimensions: focus and purpose, use of images and media, emotional content and level of reflection. These dimensions are based criteria for a typical digital story as described by Joe Lambert (Lambert 2006)

A selection of the best stories can be accessed on project website (RIGHTS project 2013a). The winner story was created by a Daniela Fernandes, a Portuguese student (Fernandes 2013). Daniela tells a story from her own life in a way that highlights important environmental challenges. She also reflects on what she can do about it and argues for engaging in environmental organizations. By relating to her life experiences the story becomes personal and emotionally strong. This is a typical example of what the project defines as a good digital story about global citizenship.

So far we have not analysed the stories to find out what they can tell us about learning outcome for the students. It would also be interesting to compare stories from different countries to study the difference in young peoples' conception about global citizenship and democracy. We also lack data about how the students experienced the experimentation and what they think about this way of learning. However, many teachers report about motivated students who made a great effort to create good stories about citizenship. They

also report that students show great ability to use digital tools to solve technical challenges that they encounter in their work

Discussion

The RIGHTS project experienced some interesting challenges both in designing the didactical methodology and in the experimentation. Among the seven partner countries there were different conceptions of democracy and citizenship and how it should be taught. Therefore, it was challenging to reach consensus on the methodology and content of the course. Some partners had difficulties in recruiting teachers to the project. This can be explained by differences in how education is organized and the extent to which teachers can be instructed to perform experiment. Another challenge was to inspire teachers to spend time on the project. This is understandable because teachers have a stressful work day which makes it difficult to get time to experiment.

Although they were enthusiastic and interested in the topic and learning method of the RIGHTS project, many teachers found the e-course too comprehensive. Some teachers report that the modules are of varying quality and the course as a whole needs to be more consistent. Also, it was hard to motivate them to use the learning platform to communicate with the other participants. However, the production of student stories was significant and the evaluation of the stories indicates that the students have been really dedicated.

Although there were some difficulties in recruiting teachers, we think that the RIGHTS approach has a great potential when it comes to motivating the students. From the student stories that have been created it seems as if the didactic methodology has a promising effect on the way global citizenship is understood and taught in school. In some cases we can see that the students create different kinds of stories than they do in more traditional teaching, stories in which they express their personal opinions and feelings about a chosen topic. This obviously depends largely on the student's maturity and the teacher's ability to challenge the students. It will also depend on factors like

- The way it is integrated in the school curriculum
- Support from the school principal
- Teachers taking the RIGHTS e-learning course

We suggest that the e-learning course is revised and presented as an opportunity for teacher education and schools in Europe

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In-service learning and the development of practice

Regional In-Service Teacher Training Professionalization in the Perspective of Participative Monitoring

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Abstract: The project presented here, as well as this paper, is based on action research. Starting from the aims of school development the quality of teacher trainings provided by the group of teacher-trainers is being improved. The final aim is a double empowering, of all schoolteachers and of the group of teacher-trainers for their training tasks. The process of introducing and implementing a cooperating and mutual supervision in the group of teacher-trainers is described. It has been shown that the de-privatisation of teaching using teamwork and professional feedback including self-reflexion methods leads to qualitatively better teaching. Therefore, a demand driven qualification of in-service teachers should reflect these requirements. This is possible if the teacher-trainers request the same competencies from themselves and also enhance their knowledge constantly.

Keywords: In-service teacher training, action research project, cooperating supervision as a method of education development, give and take professional feedback

Introduction

The student population of schools in Berlin is constantly changing and will, due to influx from different countries, become even more diverse. For an aging teaching workforce with an average age of more than 50 years this poses a big challenge. To empower teachers in order to master their tasks, strategies to implement life-long learning become inevitable.

The increasing autonomy of schools leads to changed demands on teachers. Teachers have to get involved in the change-management in the schools, which are formulated, in the schools program. This is accompanied with an adjustment process in the schools to achieve the set objectives, which in turn are compulsory for each teacher. In this way the development of the organisation school touches the autonomy of teacher with respect to chosen methods and didactical measures.

Every teacher is requested to use self-management tools in order to attain qualifications to react adequately on this heterogeneity and complexity. This in turn is only achievable, if the teachers are instructed how to reflect on their teaching in the classroom. They should learn how to question old routines and to adopt new options for their work in the steps of testing, adapting and implementing. Learning at the work place is central to this approach.

The changes described here lead also to changed demands on the support systems for schools and teachers. Teacher further education has to be provided close to the school and oriented on the needs formulated by teachers. Thus the requirements on the teacher trainers are also changed. In this text the introduction of an observation by peers as a method to support self-reflection is delineated. Also the tasks of the leadership are identified.

Friedrichshain-Kreuzberg – a Borough in the Centre of Berlin

Location and Population

The borough of Friedrichshain-Kreuzberg has a size of ca. 20 square kilometre and 260 000 inhabitants. The geometrical middle of Berlin is located in the Jewish Museum in Kreuzberg. The share of immigrants is 22,4 %, the unemployment rate 13 %.

Der borough consists of two parts, belonging two the respective German states prior to the fall of the wall. Both parts differ considerably in the mixture of their inhabitants. In 2002 the share of people with immigration background in Friedrichshain was 7% and in Kreuzberg 37,6 % according to the statistical bureau of Berlin.

The landmark of the borough is the Oberbaumbrücke which runs over the river spree, which in turn separates both urban parts. The population votes mostly for the green and other left leaning parties and is counted as creative hub with dominantly alternative lifestyles. This is also due to the fact that Friedrichshain-Kreuzberg has not only the youngest population but is also the densest populated area of Berlin with 14.000 inhabitants per square kilometre.

On-Going Changes in the Borough

Because Friedrichshain-Kreuzberg is part of the in-crowd areas of Berlin, it is also subjected to gentrification. This has great implications not only on political decisions in the borough but also on the position of and the situation in the schools. Due to the very inhomogeneous structure the borough responds not only very differently to changes in the different part but also the needs of the population are very different. All this is of importance for conditions for and in the schools

Schools (Structure, Strengths, Problems)

In total there are 53 schools run by the school administration in Friedrichshain-Kreuzberg. 30 of these primary schools, 10 integrated secondary schools, 7 gymnasiums and 6 (in the future 4) centre for pupils with special needs. In addition to this there are some centrally administrated OSZ which are part of the German vocational training that always has one part in schools.

Regional In-Service Teacher Training in Berlin

Following the signing of a contract between the German states of Berlin and Brandenburg in 2007, the Berlin institution for teacher further training was dismantled and merged into a new joint institution located south of Berlin in Brandenburg (LISUM). Extended tasks have been assigned to this new institute, consisting of measures to provide qualifications for teacher trainers, school leaders and school administration. Parallel to this a new regionalized form of teacher further training was developed and established in all of Berlin's twelve boroughs. The aim of the regionalisation was to enhance the attractiveness of the trainings through proximity to the schools (relating to offered trainings as well as to distance). The administration of the regional teacher training was assigned to the school administration. Each manager has the task to develop and provide offerings according to the needs of the schools and to political demands with the resources allocated for this task. These resources consist mostly in working hours of good teachers and some money for external personnel and (material) expenses.

In every borough of Berlin the regional teacher training has the task to cover the prospective needs of all subjects and all teachers and additional pedagogical personnel. The specific needs of the different schools have to get special attention. Thus a change from supply to demand driven offerings was intended. In order to put schools in the position to adequately formulate their demand on further teacher education they needed assistance in the development of their own concept for further teacher education. Thus it becomes clear that this is a complex Change-Management-Process, which has now been on for six years with many actively participating people.

Formation Process of the Regional Teacher Training

The formation of the regional teacher training had to be advanced on different levels. These are the areas of organisation structure and development recruiting personnel for administration and teaching, human resources development, development of teacher further trainings. A quality manual for the teacher further training was developed centrally in coordination with all boroughs. Also centrally developed was a qualification program for the teacher trainers in the individual boroughs. In every borough the coordination of the local teacher training has a half position of administrative personnel and a half position of a teacher at its disposal to organize the local teacher further education and the connected information on offerings as well as the administration. Most important areas of work are the implementing of strategies to approach schools, to develop human resources and to interlock offerings with needs of schools and pupils.

Effectiveness of Teacher Further Training

For teacher further trainings to be effective and sustainable they have to fulfil certain criteria. In this respect Lipowsky (2010) distinguishes four levels:

1. the participants are content and accept the offerings,

2. the participants enhance their knowledge,
3. the participants change their practice of teaching,
4. significant changes on the side of the pupils like higher success rate in learning, better motivation, changed attitude to learning.

In questionnaires it is often only asked for the aspects named in point one. These however, don't have a significant influence on the practical teaching after a teacher training.

Following Timberly (2008, 18) it applies for the learning of teaching personnel that: „All learning activities need a combination of trust and challenge. Without challenges only little professional learning is happening. Change however, implies risks, prior for teaching personnel to incur risks they must be able to trust that their serious endeavours are supported and not disregarded.“

Effective teacher further trainings need time, have different phases and take external expertise into account. Important is the embedding of teacher further trainings in school teams, the combination with the school developing process and the support and a provision of a concept from school management.

Timberly points out the following to accomplish successful and effective teacher trainings:

- a concentration on the anticipated learning results of the students,
- meaningful content,
- integration of knowledge and skills,
- the ability of self-managed learning,
- manifold learning opportunities and manifold potentials of use,
- an approach which is focused on addressees and their needs,
- testing new learning techniques together with colleagues,
- a well funded expertise,
- support from management,
- keeping the change process running.

Timberly stresses the ability for self-management as one of the most important factors for a successful teaching development. Self-reflection is the basis for good self-management it is the driving force for change processes.

Observation between colleagues combined with advice is a method to widen and enhance the competencies for self-reflection and self-management.

Action research as a method for further development of an Organisation

One of the most known proponents of „action in research” in England is J. Elliott, who together with Stenhouse already in the 1970ies developed the idea to include practitioners actively when developing and implementing innovations. They should become collaborators in developing processes, „...thus the idea of teachers as researchers was born” (from the German after Altrichter and Posch, 2007, 320).

Elliott (1978, 355-6) puts it in the following words: „Action researchers support the view that people can create their own identities and that they should allow others to do the same.“ and “Action research is designed to bridge the gap between research and practice,....., making education in practice more reflective. Action research combines diagnosis, action and reflection, focusing on practical issues that have been identified by participants and which are somehow both problematic yet capable of being changed. “

Lewin (1946; 1948) divides the process of action research into the four phases planning, acting, observing and reflecting. This division is analogous to the phase in project management. It gives the systematic base for this project.

Altrichter and Posch point out that in the active design of action and successive reflection processes both have to be brought into equilibrium. In this way practical theories and assumptions are created which can be tested, falsified and developed further.

Hattie (2009) confirms this notice and writes: “A discussion among teacher about teaching will be created. There must be a tolerance of errors, a peer culture among teachers of engagement, trust, and shared passion a.m.” “The same attributes that work for student learning also work for teachers’ learning”.

Participating Monitoring and Advice as a Form of Action Research

The model test “Teacher Observation by Peers in the School-Start Phase” (German “Kollegiale Unterrichtshospitation in der Schulanfangsphase”) in Berlin, which is monitored scientifically by Bühren of the Deutsche Sporthochschule Köln (Bühren, 2013), targeted the implementation of specific forms of action research in the every-day work of the participating teachers. The chosen form is a mutual observation in the class where the observed teacher chooses the focus of the observations. This is a process-oriented form of collaboration comprising all basic ideas of action research. Each teacher formulates individual questions about his or her own teachings and uses the points of perspectives of a peer for answers. In this way their knowledge about their own teachings and their response to specific situation in class is enhanced. By doing this on a regular basis a shared vision of strengths and potentials for further development is formed. Crucial for a success is a clear mutual understanding of the aims, the conditions of each partner and the way of collaboration. Following competencies help in this form of collaboration: active listening, observing without evaluation, giving and taking professional feedback,

communication on a par with the respective partner, mutual trust, and mutual interest in the development of the partner. Thus the essential moments of this approach are dialogue and reflection. The collaboration itself can be conducted in the form of a learning tandem or in small groups.

If it is successful to establish this form of collaboration between teachers of a school, then it will be possible to watch a rising self-efficacy which in turn gives more trust in this form of work. This form of continuous further education at the work place accompanies and supports continuous development of work practice and attitudes. The results of the ongoing self-evaluation are used directly to initiate changes for the better. Amongst others teams in the schools can change their planning for teaching. The mutual advice on eye level and the supervision of the intended developments as well as the communication of successes foster intensively the team-oriented development of teams. Also it is possible to identify the competencies of the participants and by way of discussions turn them into common knowledge of the whole team. In addition to these primary effects on single teacher groups and their work relevant secondary effects with respect to the development of quality standards for the whole school can be asserted.

Introduction of a Systematically Participating Monitoring as a Managerial Task – a Case Study on the Regional Teacher Further Education of Friedrichshain-Kreuzberg

Start and Planning

In the following the introduction and implementation of the method of participating monitoring in the team of teacher trainers of Friedrichshain-Kreuzberg will be described. It has to be considered, that the method to be introduced is action research directed to group of teacher trainers and performed of themselves in teams or tandems. Accordingly this will be done following the phases of action research.

While the teacher trainers work on the operational level of the regional teacher further training, the introduction of this method is a managerial task for the leadership. The point here is to describe and reflect it. Chances for fine-tuning of the process are to be identified.

With the success of this method the teacher trainers become explorers of their own offerings for training. The course of events when introducing this method for the teacher trainers is similar to that when introducing and implementing this method in a group of teachers in a school.

The guiding idea not only for the process of implementing this method but also in applying it is the mirror image of the demands on the school as a learning organisation in the demands on the teacher further training as an equally learning organisation. The level of teacher further training is thus a meta-level with structurally the same needs for development as a school. For the time being only a small subset of german schools uses

the method of observation by peers. Correspondingly, there is a big chance in using the teacher further training to spread and develop it. Therefore the teacher further training has the task to develop itself further. The question how this is accomplished best is not to be underestimated.

The task of developing, introducing and implementing this process for the teacher trainers can be supported using again an action research process on the managerial level. This is a process on a second meta-level. There the guidance and the impulses given by regional teacher training are analysed. The aim is to identify best practises for starting and implementing this action research process on the first meta-level i.e. the teacher trainers. The main emphasis is to realise the latitude for managerial decisions and to use it intentional.

The ensuing description of this process covers the pre-planning and the first action-reflection round.

Objectives

The superior aim of the process described here is the improvement in the collaboration of the teacher trainers beyond their pure professional task. In the medium term competence-teams should come into being that are better equipped to react on the complex demands of school-reality through interdisciplinary collaboration. Professional teamwork is an answer on the relatively new demands, which teachers experience due to rising inhomogeneity of classes and the ensuing need for differentiated and individual reaction with respect to different methodical-didactical and educational aspects. For a teacher the work in a team and the professional self-reflection is in this respect an indispensable competence if teaching in an inhomogeneous classroom with individual needs of the pupils is to be successful. The teacher trainers have to have the same competencies if they are to work successful in the complex school-system. It is sensible to acquire and use these competencies in the team of teacher trainers. At least in Berlin this is not part of a standard qualification procedure up until now. Familiar and reliable surroundings are best suited for implementing it using an internal qualification process. The design of the qualification method for teacher trainers is similar to the design used for school-intern qualifications. The demands on the teachers in schools are reflected on a level of adult education and possible reactions tested. The qualification of the teacher trainers happens at their own work place. The teacher trainers are strengthened because peers reflect their trainings on par with them. The delivered positive feedback lays the foundation for successful personal developments. The visit of trainings is mutual as is the giving of feedback. Both facts contribute to the formation of a real team of teacher trainers with a common understanding of the importance of self-reflection and quality assessment of the own work. The standards for quality become common and their assurance regular practice. On the strategic level this gives rise to a deliberate introduction of a quality management.

Because a requirement for the introduction of this form of collaboration is trust between the colleagues, they were actively involved in the introduction process. Over the years a steering committee was installed to prepare important decisions, which are to be made in collaboration the administration of the borough.

It could be observed that all participants had severe difficulties to make pure observations free of evaluations in the introduction of the method described here. Especially for teaching personnel this poses a challenge supposedly because for them it is a daily task to make evaluations. Thus the first step in introducing the method of participating observation was to acquire or enhance specific competencies. The special form of feedback without any form of assessment is important for achieving an openness of the advised partner for the aspects seen by the advising partner. It is an attempt to mirror the events in the classroom. The analysis and evaluation falls to the person who planned and performed the teaching resp. the training. He or she has to decide if set aims were achieved and if the teaching can be bettered. Equally important is the assurance of confidentiality in this collaboration so that everything discussed stays between the people involved in the discussion. Usually each participating teacher trainer has own objectives for development of their working practice. They use the presence of the tandem-partner to discover blind spots in their perception and to find out how the own work is experienced by others. Insofar this is also a very special form of evaluation that surpasses the standard feedback-rounds after an event or the information to be gathered from questionnaires.

Additionally it is important to identify recurring main topics in the observation and advice by peers in the group of teacher trainers to develop the strategic planning of the project further. In this way the exchange of experiences between the colleagues is encouraged and a joint identification of needs for further development is stimulated. It follows that this crystallisation of themes important for the whole of teacher trainers and for the organisational development gives input for the leadership and its tasks.

Realisation

In the beginning some colleagues (10 out of 38) stated their readiness to try out this method of observation by peers in their own trainings after being introduced to it in different seminars. For their supervision and support to master the stumbling blocks in this first implementation they got offered an external coach after some months. The group of teacher trainers selected following main topics for their observation by peers: attitude of the trainer to the attendees, atmosphere in the training, control of discussions, activation of attendees to give own input and formulate question to presented topics, build-up of the seminar (introduction, choice of method, implementation), observation by peers as a theme for a teacher training, balance between problems set up by the attendees and the need for continuous work on specific topics.

Observation

During the whole implementation process the leadership has the task to stay constantly in contact with the different teams. This ensures that important aspects and problems in the implementation get known and that the leadership can react with according measures to maximise the positive effect of the whole undertaking. This is supported by continuous reflection of the gained information.

Simultaneously different experts give professional input for the development of the whole group of teacher trainers on selected topics. Thus not only the field of vision on these topics gets enhanced but also all colleagues are integrated in one group as such without the need of individual teacher trainers to have already taken part in the new method.

Reflection

All in all it can be stated that this method comprises an intensive and promising kind of learning, which can be integrated into the everyday work practice. Although this method has been used in isolated instances in schools the transfer onto the level of teacher trainers has until now not been initiated nor researched.

In the reflection phase the experiences of participating teams are evaluated and edited so that important topics can be conveyed to non-participating colleagues without disclosing personal information and experiences. Then all teacher trainers are informed about the successes of this method and the complete group gets the chance to participate in the next step and to add own input. This part of the planning is a very sensitive step. Any anticipation of what colleagues may be ready to disclose about own experiences and what information they may contribute for the good of the whole group may be wrong. This exacted collectivisation or de-privatisation of teacher trainings has to be enacted very carefully so not to stipulate denial. Only if the actors in this process are able to recognise own chances and it is possible to emphasize the opportunities this step can be successful.

Transfer

While the introduction and implementation of the method of observation by peers is focused on the further development of teacher trainings the subsequent transfer of the experiences into new topics of teacher trainings is a future task to accomplish in the medium term. This will give rise to a multiplication of the teachers with the skills to apply this method and in turn put them into a position to better react on the demands of daily school life.

This process cannot be accomplished ad hoc. Therefore the planning should at least set three years to implement the whole process on the operational level of the actual teachers in class and the two meta-levels. A proper aim would be to get 70% of teacher trainers to know and apply this method.

Conclusions

After introducing the method of observation by peers in the group of teacher trainers the motivation of additional colleagues to use it is the next step.

The method initialises a change process, which focuses on actual teacher further trainings, not on models. The discussion between colleagues and the reflection on the teachings gives a common and well-founded understanding of what consists a good teacher further training. This leads to better-planned teacher further trainings, which take into account the specific abilities of individual colleagues. It is the task of the leadership to make these competencies public and match them with needs of colleagues and schools.

If and how it is successful to initiate individual processes of self-reflection remains an open question for further research.

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School Takeover – an important contribution to the learning process for student teachers?

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Abstract: The purpose of this study has been to gain an insight into what student teachers learn from taking over a lower secondary school for a week. The target group in the study has been a group of student teachers from the Practical Pedagogical Education (PPU) at Østfold University College (HiØ). The methodological instrument was to read and assess group logs, written by the students after the School Takeover. The main findings from the study indicate that the student teachers were preoccupied with what they experienced during their encounters with the pupils, that they were engaged in cooperating with their fellow students, and what they considered the immediate and crucial parts of their teaching. They were less concerned with using their academic competence in an innovative way. To some degree, they also made comments about *facing reality* and the framework surrounding the School Takeover.

Key words: School Takeover, student teachers, lower secondary school, pupils, teaching

Background

Practical Pedagogical Education at the Østfold University College at the Faculty of Teacher Training, which is a one-year program specializing in pedagogy, didactics and practice, has for a number of years included a School Takeover as part of the practical training. For the past three years, the School Takeover has been carried out at a lower secondary school close to the HiØ. The School Takeover is carried out early in the course period, and entails that the student teachers assume responsibility of the teaching for a week at the practice school, with tutors from the HiØ serving as supervisors for the students. The majority of the practice schoolteachers leave the school during this period. Prior to the School Takeover, students, tutors and key persons from the practice school make thorough preparations by defining tasks, allocating teacher students to groups of pupils/classes, and establishing an overall topic for the lessons. The students are organized into cross-disciplinary tutor groups, and each tutor group assumes responsibility for one class/group at each of the three levels of the lower secondary school. The main methodological approach for the School Takeover in 2011/2012 was to employ several principles set down by the Ministry of Education (Kunnskapsdepartementet, 2010). In this context, this entails focusing on creativity, having a concrete task with a defined research question and presenting the solution during the course of the week in question.

The School Takeover has gradually become defined as an important part of the practical training at the PPU. *The practical training is to contribute to developing the student's general competence in establishing learning objectives, planning, managing and evaluating the teaching practice* (HiØ, 2010). It has gradually become necessary to assess whether the practice actually provides important contributions, which promote learning, to the professional education.

On this background, we decided to launch a research project in order to investigate whether our students actually experienced that the School Takeover contributed to cultivating them towards becoming professional teachers. The process of becoming a professional teacher is here understood as gaining self-insight and reflecting on one's own professional performance. The project was called *School Takeover – an important contribution to the learning process for student teachers?* Eventually, three research questions were formed, based on learning outcome descriptions from the "Course Plan for PPU" (HiØ, 2010).

How does the School Takeover contribute to achieving the following learning outcomes?

- 1: How do the students find that team collaboration contributes to developing their practical knowledge about the role of the teacher?
- 2: How do the students find that the teamwork involved is helpful in terms of planning, managing and evaluating their pupils' learning activities?
- 3: How do the students find that they are able to employ their expertise in order to initiate innovative learning processes for their pupils?

The School Takeover was carried out in September 2011; 69 students participated. The students were separated into groups of six, and each group was assigned the responsibility for one class, where the methodological approach was to lay the grounds for innovative learning processes. The school has 12 classes; 4 classes on each level. The pupils were also separated into groups. Prior to the School Takeover, the students had been trained in theory on using observation, interviews and logs as methodological approaches, the didactic relation model, and using innovative learning processes in their teaching practice. The students were also present at their respective classes for one day in order to observe and get to know the pupils.

A team of teacher training tutors were present throughout the entire School Takeover. The role of the teacher training tutors was to guide students in matters related to their teaching practice, and make sure the student teachers and pupils worked under safe and secure conditions.

Shortly after the School Takeover, the student groups were asked to write reflection logs outlining the learning outcomes from the School Takeover. Prior to the School Takeover, the students had been informed that they would be asked to make reflections in the form of logs, and that the logs would be used for research.

Theory

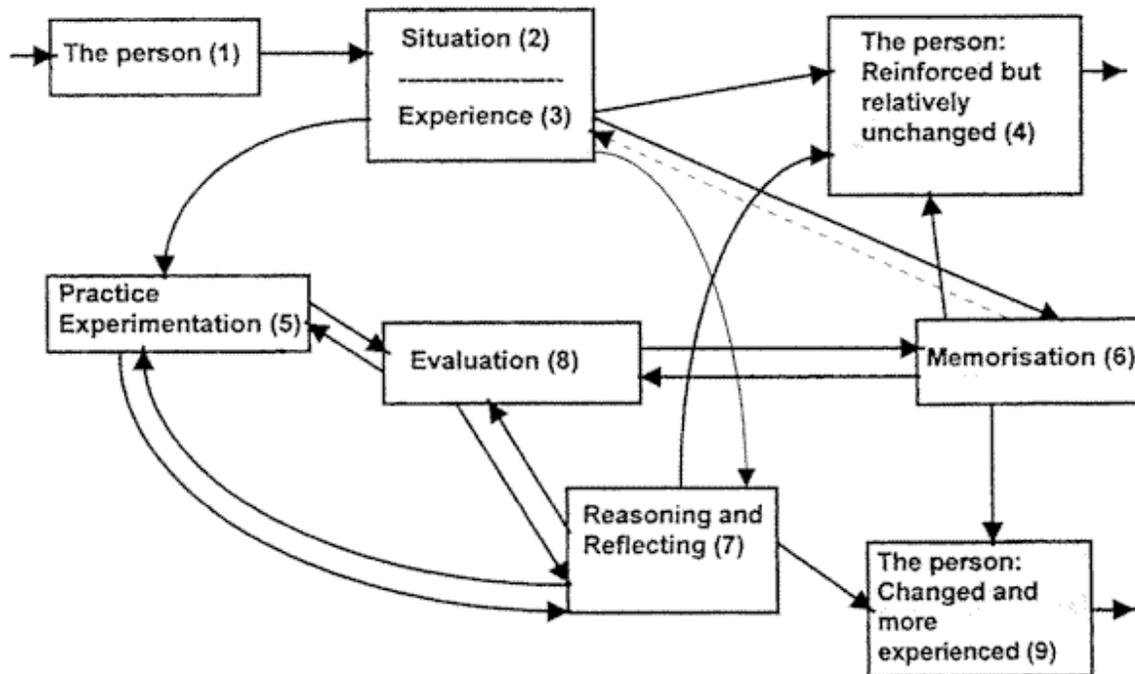
This study is theoretically based on Peter Jarvis' theory on how practical knowledge is developed (2002). Jarvis points out that the practical knowledge is the subjective and personal knowledge of the practitioner, which has been gained through personal practice. *How to do it* is a skill gained through sharing knowledge and experiences, and at the same time learning about the practice from others. The practitioner thus builds their knowledge about their own practice by doing, thinking and reflecting over what he or she is doing at all times – *Why do it*. Practical knowledge thus becomes individual, subjective and dynamic in the sense that the practitioner learns continuously. Practical knowledge, however, will not be subject to generalization. Well-functioning practice may of course be useful and helpful to others. Nonetheless, one must never take for granted that what may work for some, will also work for oneself or others.

When Jarvis (2002) describes the development of practical knowledge, he investigates how knowledge develops from being a student to being an experienced practitioner. In this, he touches upon the terms secondary experience and primary experience. Secondary experience happens when the student, at the beginning of their professional study, encounters theory. This is what Jarvis considers to be secondary knowledge, and hence he terms it imparted learning. The task of the students is thus to absorb and reflect on this theoretical knowledge. The problems arise, according to Jarvis, when the theory of the past is to be seen in connection with a continuous practice, which is both mutable and future-oriented.

Primary experience is first-hand experience and knowledge about one's own practice, where the validity of the knowledge is tested by how the work is to be carried out. The practitioner thus develops their personal theory through practical knowledge and relevant skills, which will influence the further learning process. The practitioner learns both in practice and by practice by reflecting on their own actions, which contributes to instilling reflecting processes in the continued work.

When the practical knowledge in the form of theory and action are legitimized, is consistent, and also works, the practitioner will according to their own values, develop their own way of doing things and, most likely, repeat them. Conversely, if the practitioner is obliged to change their practice, this would require new knowledge to be developed, tested and legitimized (Jarvis, 2002).

Development of practical knowledge



Jarvis' original model from 1987 (Jarvis 2012) on how practical knowledge is developed, offers an extended understanding of learning, and shows that learning can take many paths, and have multiple outcomes. What the learner (1) experiences (3) in a context (2) can result in three different learning processes: *non-learning*, *non-reflective learning*, and *reflective learning*.

Non-learning: The practitioner's behavior remains relatively unchanged (4). That is, the encounter with practice does not lead to any form for knowledge change, and is characterized by rejection and prejudice.

Non-reflective learning: The practitioner remembers or memorizes (6). This is a form for imitative learning, apprenticeship and skill acquisition. Learning by memory (6) takes place during individual experience (3), and changes the performance of the learner through further experience and learning (9).

Reflective learning: Experience (3) has led to new insights and reflective learning (7), in that the individual through practical experimenting (5) and evaluation of consequences (8) has become altered and more experienced (9).

Method

In order to find answers to our research questions, we have used the students' group logs. Each tutor group was obliged to write a reflective log about their learning outcomes from the School Takeover. We received 12 student group logs.

Log writing is a way of documentation that opens up for rich details and allows for referring to theory. Logs may offer extensive reviews of the phenomena they describe (Bjørndal 2002). Furthermore, log keeping is a structured method for sorting and processing experiences and lessons learned (Tveiten 2002). Group logs can be compared with focus group interviews, where the log writers must communicate with each other before they write, and as they write, so that the logs do not simply remain a way of communicating with the researchers. Furthermore, the log writers must relate to each other's opinions, and the log thus becomes a collective product (Dæhlen et al., 2011). Group logs utilize the dialogue between the participants, and the participants may themselves set the agenda for the phenomenon upon which they focus their attention. The researchers may thus become conscious of aspects of the issue at hand that were not originally in focus. One objection against the use of group logs as research material is that we obtain less insight into the contributions of the individual student.

The students' logs from the School Takeover were relatively detailed, but mostly without any links to pedagogical or didactic theory. In order to analyze the material, we developed a matrix where Jarvis' (2012) three different perspectives on learning processes formed the horizontal and main dimensions. The students' statements from the logs were sorted into categories in accordance with our research questions, and were analyzed in light of Jarvis' perspectives.

Findings

Before entering a more detailed analysis of the log material, we performed a preliminary sorting based on the impressions we were left with after the first reading. What were our immediate impressions, what were the main features of what the students wrote, and were there clear deviations from the main features? Were there any general tendencies, and did the material contain any surprises?

Based on our first readings of the students' logs, we discovered that:

- The students found both positive and negative sides to working in a tutor group
- The students expressed being concerned with the near, immediate, urgent and specific
- The students seemed less concerned with using their expertise innovatively

These were statements that, to a great degree, could be linked to the three research questions. In addition, we found that:

- The students were concerned with their encounters with the pupils
- The students expressed, to some degree, their experience of meeting with the unknown
- The students seemed to pay less attention to framework factors

The three latter categories fall beyond our research questions, but we nonetheless chose to include statements concerning these elements, as they seemed to influence the learning and development of the students.

In our later readings, we used Jarvis' three learning experiences: *non-learning*, *non-reflective learning* and *reflective learning* as our basis; and we used the previously described matrix as our analysis tool. This allowed for a deeper and more thorough analysis of our data material.

The students were relatively concerned with matters that could be connected with research question 1: *How do the students find that team collaboration contributes to developing their practical knowledge about the role of the teacher?* It was somewhat surprising that we found that all of the student statements could be categorized as *reflective learning*: *Being six in a group enabled us to benefit from the experience of each other; yet at the same time it was challenging to agree on a consensus on our attitudes towards misbehavior and noise level.* Other statements in the same category touched upon the connection between group collaboration and the opportunities for providing individual teaching, the connection between group collaboration and utilizing each other's academic expertise, or the connection between group collaboration and dodging responsibility.

The students for the most part described matters concerned with research question 2: *How do the students find that the teamwork involved is helpful in terms of planning, managing and evaluating their pupils' learning activities?* We found that almost two-thirds of the statements in the logs describing the teaching experience could be categorized as expressions of *reflective learning*: *we learned that thorough preparation and goals for the lessons were important factors when it comes to offering a useful lesson.* In other statements of the same kind, the students describe challenges connected with estimating the time used when teaching, using surveys at the end of class sessions, or how they dealt with the detailed planning of their teaching practice. However, we also found some statements about teaching which not could be said to harbor reflection or afterthought: *We started the day by writing down today's goals on the blackboard.* The students are doing "the right thing," but did not link any comments to their own practice. Other statements of

the same kind touched upon the usefulness and importance of planning, and that the students felt they had learned that blackboard teaching was positive.

The students did not write much about matters relating to research question 3: *How do the students find that they are able to employ their expertise in order to initiate innovative learning processes for their pupils?* One of the few tutor groups that reflected on their own experience expressed the following: *This approach is quite constructive when it comes to collaboration across the usual division lines – we gained an experience in teaching, photographing, video photographing, summarizing, and playing certain things by ear.* At the same time, this was where we also found statements categorized as *non-learning*: *In our group, some are of the opinion that the entire teaching situation is artificial, and that including music and foreign language teaching is a waste.*

Meeting the pupils was one of the categories that emerged from our data material, and the meetings are here described as pleasant, positive and exciting. Many statements were about the pupils; most of which expressed reflection: *Dealing with such a well-functioning group of 8th graders as the one we met, was actually a challenge in itself, as it required different approaches to relate it to and meet the students with.* The students' writings had in common that they related the meetings with the pupils to different teaching situations, closely related to the school and teaching context. The way some of the tutor groups described their encounters with their pupils made it difficult for us to distinguish between *reflective* and *non-reflective learning*. However, certain statements seemed not to contain any particular degree of reflection: *We gained experience about the interplay between teacher and pupil.*

The next category in our material concerned meeting the unknown. A smaller number of tutor groups mentioned this to some degree, and they generally demonstrated that they reflected on their experience: *It felt safe to share the responsibility, as one is thrown into a classroom at a relatively early stage.* These statements had in common that the students found *being thrown into the real world* to be a positive experience.

The last category concerned framework factors. Only one tutor group reflected on this topic; *The Teacher's Training College guidelines could have been better; among other things, none of us had picked up the fact that we were supposed to assemble in the staffroom before and after the school day, and the Teacher's Training College could also have given us a closer follow-up, particularly when you consider our lack of practical experience.* In this category, certain tutor groups also expressed their opinions and experience without further reflection: *The summary session on Friday was unnecessary...*

Discussion

When we were dealing with our findings, we found that it is difficult to distinguish between *reflective learning* and *non-reflective learning* in practice. It is not always clear whether the students' statements build on reflection or not. This made a discussion based on our

categorization of the findings challenging, as the categories themselves are not consistently precise and measurable, at the same time as the nuances in Jarvis' theory strengthen the theoretical understanding of learning.

When Jarvis (2002) deals with *practice and silent knowledge*, this may gravitate towards supporting the problem of separating the two learning processes *reflective and non-reflective learning*:

We may, when we get familiarized with our own actions, be conscious about that which we are doing, but we often find it to be difficult, not to say: impossible, to define it – and further; silent knowledge is: the kind of knowledge which, although it may be expressed in one form or another – not necessarily, and in many instances – is impossible to express linguistically (Picardi 1988, in Jarvis 2002, p. 57). Jarvis emphasizes this: Silent knowledge may thus be present in the knowledge about how, when, that, what and why (Jarvis 2002, p. 58). After considerations based on the above, we have, when discussing our findings, chosen not to adhere strictly to the two learning processes reflective learning and non-reflective learning.

We gained the experience of playing on each other's strengths

The students expressed how they found the collaboration in a tutor group before, during and after the School Takeover to be instructive; both enriching and demanding. One group described the experience thus: *We were actually 5 teachers present in the classroom, and with our different areas of expertise, approaches and views, this may be both enriching and challenging.* Other groups stressed that it was instructive to learn from each other's experience. It comes as no surprise that the students, being familiar with their own areas of expertise, felt that they together contributed to an academic platform they could support. The students maintained focus on their own academic fundament, and in the logs, they seemed less concerned about whether this had any relationship to the pupils' learning experience. To many of the students, the School Takeover was the very first experience they had in collaborating about teaching with others. Kyriacou & Kuncze (2007) describe the first period in a teacher's professional life as a struggle to survive, which consists of dealing with the *practice shock* and relating to different types of colleagues. They were nonetheless generally happy to collaborate on the academic content of the teaching practice, and not least to give and receive support from each other. This is also supported by other research on novice teachers; that is, the best support a novice teacher can get comes from working in a collaborative community that has developed a sharing culture (Wang et al. 2008). One of the tutor groups added an extra dimension to the collaboration; the relational bonus: *For us as a tutor group, the collaboration has been positive, because we have come to know each other better during this period.* A study by Ulvik et al., points to similar conditions for novice teachers in the upper secondary school: *However, whereas the classroom is an important source for well-being and satisfaction,*

the main support comes from colleagues (Ulvik et al. 2009, p. 4). New teachers and student teachers are more vulnerable to the various events of the school day than what is the case for more seasoned teachers, and they depend on positive experiences to a greater degree – leaning on good relationships with colleagues in order to develop their identity as professional teachers (Smethem, 2007).

One experience they had in common, described by several of the tutor groups, is that the academic support and collaboration did not contribute to a unified way of dealing with the pupils; one group says it like this: *However, at the same time, agreeing on a shared attitude towards misbehavior and noise level posed a challenge*. They gave conflicting instructions to the pupils, and established themselves as class leaders in different and conflicting ways. This experience deviates somewhat from what Ogden (1996) claims, namely, that good class leadership is strengthened when teachers collaborate on solutions and instill preventive measures. One possible explanation may be that the collaboration and discussions within the tutor groups failed to be elaborative enough. The students found support in each other when it came to the academic content, yet without discussing how this benefitted the pupils' learning. Raaen and Aamodt (2011) touch upon this phenomenon when they claim that teachers rarely discuss the consequences their own teaching has on the pupils' learning. In the same article, they add: *When teachers collaborate with each other and with school leaders, it is above all a matter of planning, coordinating and practical arrangements; not professional correctives which may raise the standards of the teaching practice* (Raaen and Aamodt 2011, p. 3).

Plans do not always correspond with reality

The tutor groups produced by far the most text about planning, managing and evaluating the pupils' learning activities. It seems that this area yielded the most experiences connected with learning and developing as a teacher. This can be interpreted as being the part with which they were the most preoccupied. One of the few theoretical topics the students received lessons in, prior to the School Takeover, was precisely *educational planning and the didactic relation model*, which to some degree may have influenced the students' emphasis on matters concerning their teaching. The planning, and the relationship between plans and what actually happened during the practical performance phase, received a particular focus: *There was a significant gap between the things we had planned and our practical experience – some things took longer than planned; other things took less time*. Many of the students found time to be a stressful element; both in terms of how much time they spent on planning as well as estimating how much time they would spend on a teaching program they had designed. *One of the things which influences the teacher's sense of mastery is whether they are given time to prepare their teaching* (Smith et al., 2013, p.19). At the same time, several tutor groups stressed the importance of being well prepared. One tutor group pointed to the connection between thorough planning and having the pupils work independently: *Thorough preparation on the teacher's*

end may contribute to having the pupils work more independently later on in the process. In addition to focusing on preparation, this group highlights one perspective that is rarely seen in the logs. They are concerned with the relationship between preparation and having the pupils work independently. Most statements in the logs concerning planning, management and evaluation of the teaching focus on students themselves: *Attention is focused on themselves and how they are regarded as teachers* (Smith et al., 2013, p.19).

Some tutor groups actively employed elements from formative assessment in their teaching: *We learned that thorough preparation and establishing goals for the lessons were important factors in order to enable us to make the pupils learn; and further, we assessed the pupils' learning through a simple questionnaire after the end of the project.* Evaluation had not been highlighted as a separate topic when the students were to carry out the School Takeover. It had been presented as one in several didactic categories when the students were introduced to didactic thinking some time before. Several tutor groups nonetheless used terms such as goals, criteria and learning outcomes in their interaction with the pupils. However, in the logs, this has been linked to the pupils' learning only to a small degree. Black and William (2009) point to the many challenges teachers face when it comes to assessing their pupils, at the same time as they emphasize how important formative assessment is for the pupils' learning.

The entire teaching situation is artificial...

The students made few comments regarding using their academic expertise in innovative learning processes or any insights they may have gained in this regard. Several tutor groups regarded innovative learning processes as being synonymous with project work: *The pupils were engaged in project work, which made it easier for us to get to know each individual; and further, Project work can be taxing, but also offers a varied teaching experience.* In these statements, the students tied project work to relationships and getting to know the pupils, and how the students were granted a varied learning experience. The students did not link project work with employing their own academic expertise, but they did express having learned something about the connection between project work, getting to know the pupils and offering variation in their teaching practice. This can be understood as what Jarvis terms *incidental learning*; that is, the learner learns something other than what was planned (Jarvis, 2012).

The logs contained few statements pointing to *non-learning*; however, nested under research question 3: *How do the students find that they are able to employ their expertise in order to initiate innovative learning processes for their pupils?* One tutor group made the following comment: *In our group, some are of the opinion that the entire teaching situation is artificial, and language teaching is a waste.* Jarvis terms this phenomenon *non-learning and rejection*; *Not every situation is a learning experience, nor does everyone provide opportunity for growth* (Jarvis, 2012, p. 30). The students in this tutor group probably

learned little or nothing about innovative teaching processes, they rejected this phenomenon empathically.

Meeting the students was the best part...

The students' descriptions of meeting the pupils, and their experiences and the insights they gained from these, account for a large part of our data material. The language used in these group logs was largely characterized by boldness and exuberance; this was the only category where expressions such as *laughter*, *humor* and *good mood* were featured. The students' statements can be divided into two groups: Statements describing the students' experience of meeting the pupils, and statements dealing with the behavior of the pupils or their reactions to different situations. A quite typical phrase from the first category was: *A third student discovered that the pupils were not as intimidating as she feared*. Many of the students have expectations of how the lower secondary pupils would be negatively inclined towards them, which would be expressed in ways that would be intimidating and unpleasant. This came as no big surprise; it is a common notion that Norwegian pupils have a negative attitude. Kjærnsli (2004) points out how Norwegian pupils and principals alike agree that unruly and negative behavior is a significant problem. At the same time, the students were very concerned with developing and maintaining good relationships with their pupils: *In order to get to know each other better, and create good relations between the students and pupils, we did some exercises...* The influence that the importance of having good relationships with their pupils has for the students is also confirmed by other research on how novice teachers value maintaining good relationships with their students. It is the contact with the pupils that provides novice teachers with good experiences in their job (Nias 1996). However, the students in our project also gained insights into how the pupils affect the learning environment. *Another thing we experienced was how individual pupils may affect the class environment as a whole*. The students also had to deal with pupils who really were negatively inclined towards the school, the lessons and the student teachers, and some of what this was probably they felt to be the most challenging. Both because the students gave of themselves quite a lot, and because they felt that they were novice as teachers, it is reasonable to assume they were both vulnerable and insecure, and that this became an issue in situations that involved so-called difficult students. Research points out how insecurity and vulnerability can be prominent aspects of this new profession, and that they will need support and recognition from others (Kelchtermans, 2009).

Despite the challenges and feelings of insecurity, meeting the students was the part the students appreciated the most: *We felt that we met a pleasant group of novice 8th-graders, and they had a largely positive attitude towards the project*. This corresponds with how novice teachers describe the first encounters with their pupils: *The part new teachers enjoy about their job is to be allowed to teach subjects and deal with pupils* (Smith 2010, p.44).

It was useful to be allowed to move out in the field...

Although the students expressed the fact that much was new and strange to them when taking over a school, most of them felt that *being thrown in at the deep end* was instructive and exciting: *Our tutor group thought it was useful to move out in the field and make our own experiences.* They do not describe taking over a school and having responsibility for a class as being a shock. The *practice shock* is a well-known and widely used term for describing the experience of novice teachers at the launch of their teaching career. This experience is described as the clash between intention and reality faced by the new teacher when he or she assumes her first teaching post (Achinstein, 2006). The clash between theory and practice is described *inter alia* in a report dealing with *the practice shock after the PPU*, emphasizing how the new teachers feel they are not prepared enough to be able to solve practical challenges in their daily practice in school (NOKUT, 2013). It may be that the students did not find the School Takeover to be a shock because it differs in some ways as different from starting one's teaching job for the first time. However, this may also be explained with how the students may actually have felt that the transition from University College to practice area was no big break or shock, but rather an anticipated transition.

The Østfold University College guidelines could have been better...

Prior to the School Takeover, many of the students worried about whether everything had been properly organized to facilitate a safe and predictable takeover. However, few statements in the logs touched upon any lack of preparation. There were some, though; *Finding a key to the arts & crafts room was difficult.* The students had, to a lesser degree than experienced teachers, knowledge about and insights into matters that would support their teaching. Kelchtermans (2009), claims that teachers who are not in control of their working environment, but are simply subjected to it, are particularly vulnerable. *The school could have provided clearer instructions on what we were supposed to do during those days at school.* Any learning experience the students may have gained from the issues raised here can be considered to be what we previously termed *incidental learning* (Jarvis 2012); they have learned that insufficient information leads to insecurity. It is also common for new teachers to be concerned about getting help to resolve practical issues (Fresko & Alhija, 2009). At the same time, it is often the case that the attention is eventually shifted from practical issues to the teaching itself.

Conclusion

In our discussion of the findings of the study, we break with Jarvis' tripartite classification of learning processes (Jarvis, 2012) to some degree. We argued for this approach at the introduction to the discussion chapter. The students learned much during the School Takeover, and they have demonstrated in their logs that they have reflected on what they have learned. We have leaned on, and employed, recent research on being a novice teacher. Many of our findings are supported by other research. We see that some of the

research-based literature we have leaned on directs its attention towards recent graduates, whereas “our students” are still in the middle of the education process. We nonetheless believe the research we have leaned on is relevant in order to highlight our findings and supplement our discussion.

The students have learned a lot about collaborating in a tutor group; they have learned a great deal about teaching, and they have gained many new insights from meeting the pupils. They do not express having learned a lot about innovation and utilizing their own academic specializations. Entrepreneurship and innovation is important both in the teacher education and in the Norwegian school (Kunnskapsdepartementet, 2010). In this context, the fact that the students express themselves sparsely and partly negatively with regards to learning outcomes from “utilizing their academic expertise in innovative learning processes” poses a challenge for HiØ/PPU regarding future school takeovers.

The School Takeover takes place early in the students’ school year. This also affects how the students and the university college deal with, and interpret the relationship between theory and practice. This implementation of a practical element early on in the course of the study turns the focus of the theory-oriented teaching of the university college towards issues connected with the professional teacher’s role, of which the students have already gained practical experience. We may thus claim that the traditional order has been turned around. Ulvik et al. support this approach: *... some aspects of the teacher education come in the wrong order, and perhaps more practice needs to come before the theory. Students need experiences to link practice and theory....* (Ulvik et al., 2009, p.7).

In the teacher training as a whole, the attention is increasingly turning towards research-based teaching as a basis for educating professional teachers (Kunnskapsdepartementet, 2013). At the same time, practice-based learning holds a strong position in the practice field and among student teachers – including at the PPU. Raaen argues that these two approaches should be united: *This means that teachers have to unify the analytic, universal and research-based with the normative, particular and experience-based* (Raaen 2013, p. 2).

The School Takeover at the HiØ/PPU can be seen in relation with the claims promoted above regarding the relationship between theory and practice in the teacher training, as well as a combination of the research-based and the experience-based view on teacher education. Along the lines drawn up here, the School Takeover can be a substantial contribution to a more unified and coherent PPU.

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Using the Five “C” Model to Advance Teacher Education That Matters

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Introduction

An exciting and challenging prospect for novice and “seasoned” teachers alike is the process of educating students to be successful as teachers in the classroom by preparing them for expected and unexpected events, as well as, the yet to be developed technology. In order to prepare their students for the teaching arena, teacher educators must be constantly learning the newest trends in education along with cutting edge technology which is released daily. Many problems in classroom management may arise when teachers and pre-service teachers are bombarded with unfamiliar technology. The excitement of having the latest electronic tool to improve learning can actually be a detriment to the learning process when students’ interest in using their iPads, smart phones or androids, computers, and electronic notebooks take their attention away from the classroom activities and presentations. The university professor may become frustrated with attempting to teach students who seem to be uninterested in what is happening in the classroom. The situation could be partially due to a dull and boring lecture but nevertheless both the students and the teacher would be performing at an unacceptable substandard level, a lose-lose situation. Something must be done to rectify this scenario and insure a positive learning environment so that it becomes a win-win learning situation.

The author is proposing a new model, The Five “C” Model to be used in the classroom beginning on the first day of class to meet challenges in teacher education including the following: Boredom, Lack of interest, Lack of preparation, divided attention, motivational issues, distractions caused by other people, as well as, technological distractions—iPods, iPads, iPhones, and texting. The Five “C” Model will incorporate defining, elaborating, and utilizing the following in the classroom:

1. Common courtesy—learning good global citizenship skills and appropriate good manners;
2. Communication skills---verbal, non-verbal body language, written and technological skills beyond “tweeting” and good manners needed when using technology.
3. Common ground---involves developing relationships with others and understanding and valuing one’s own culture and other cultures;
4. Commitment---involves motivating the uninterested and goal setting techniques;

5. Critical thinking—involves problem solving skills and decision making skills needed to approach new knowledge and unfamiliar situations.

When teachers start using the Five “C” Model on the first day of class the ground rules for the classroom and for the following sessions can be set with teachers and students working together to establish a good working environment for the class. This procedure will reduce both the teacher’s and students’ frustrations and supports an effective classroom management plan.

Common Courtesy

Teachers working with their students define “Common Courtesy” for the class. Different topics to include in the discussion of “Common Courtesy” could be the following:

- 1) Consider others first;
- 2) Show respect for others—such as raising one’s hand before speaking;
- 3) Refrain from interrupting others;
- 4) Use table manners—such as not talking with food in your mouth and proper use of eating utensils relating to specific cultures; and
- 5) Refrain from texting or using cell phone during class---turn off electronic devices if not being used for the class.

Communication

According to Aarti (2013) communication is the act of sharing information with a sender and a receiver. The four types of communication include verbal, non-verbal, written, and visual such as photography, signs, posters, symbols and icons (Aarti, 2013). The seven basic concepts of good communication according to Mindtools (2013) include being: “clear, concise, concrete, correct, coherent, complete, and courteous.” The instructor and students discuss these concepts and their importance within the class setting.

The non-verbal communication or “body language conveys our true intentions, unconsciously equaling about ninety three percent [93%] of our communications” according to Rae (2007.) “Body movements and gestures convey about fifty-five percent [55%] while voice tone and inflections convey thirty-eight percent [38%] with verbal communication convey only seven percent [7%] so that it is not only what you say but how you say it that is very important in communication” (Rao, 2007.)

There are many ways to improve communication skills stated by Lad (2012.) The ways to improve communication skills include the following:

- 1) Observe—improve observation skills—look for details in all surroundings;
- 2) Listen—don’t be thinking of what you can say next—take your time so that you think twice before you speak once;

- 3) Use positive thinking—look on the bright side of the situation;
- 4) Keep it light—develop a sense of humor;
- 5) Read;
- 6) Do not judge;
- 7) Be conscious of your body language; and
- 8) Be polite (Lad, 2012.)

Common Ground

The concept of common ground involves understanding one's culture and developing an understanding of other cultures. Developing relationships with others and valuing their cultures is an important aspect of common ground. The concept of common ground with others can actually begin to develop in children as young as three years old (Liebal, et. al., 2013.) When people are from different cultures whether from the same or different countries common ground can be found when they identify features which are alike in their cultures. According to a study by Fast, et. al. (2009) establishing common ground is a social-psychological process in which people converse with others using familiar elements of the culture. In the Fast, et. al. (2009) study the familiar elements were professional baseball players and the performance of the players was not as important to the conversation of those participants as the common ground.

Teachers when working with their students must keep in mind the western and eastern culture models and which one their students may be using as a reference base in viewing the world and their imminent position as teachers. The two models, western and eastern culture models have different rules for viewing family culture and child development expectations; hence students and teachers may view the world, learning, and classroom expectations through different lenses. The "western culture model is based on independence, social value on scientific knowledge, competition, and achieving financial freedom while the eastern culture model is based on helping and group harmony with social value on polite forms of communication and respect"(Liebal, et.al. 2013). The western model or individualism and the eastern model or collectivism held by families in the different cultures will show variations within families, generations and cultures.

Pena and Fiestas (2009) in their studies with educational providers working with children and families from eastern and western cultures found that parents from the two different cultures viewed specific "milestones" in the child's development and the interaction of the child and parent quite differently. For example in western cultures achievements such as "self-feeding, drinking from a cup, and sleeping alone, holding the floor, and learning to take turns equally" were considered positive developmental milestones while those in eastern cultures did not agree (Pena and Fiestas, 2009.) When educational providers counseled the eastern culture families to "get on the floor to play with the child as part of a training session" the parents were not accepting of this (Pena and Fiestas, 2009).

A cultural competence compass developed by Gallavan (2011) guides the teachers and students awareness in arriving at cultural competence through a checklist identified as items on a compass map pictured in Gallavan and Webster-Smith (2012) with eight different directions each having a statement useful in developing cultural competence. Gallavan (2011, 2012) started with

“N=north—notice culture and cultural characteristics; NE=northeast—negotiate and evaluate curriculum and content; included E=east—establish community and context; SE=southeast—seek and engage in collaboration and construction; S=south—spark conversations and climate; SW=southwest—strengthen and weave together complexities and controversies; W=west—waken compassion and commitment; NW=northwest---nurture and welcome challenges and changes and returns to N”(p. 407).

By using this cultural competence compass teachers and students would be assisted in developing common ground for classroom interactions.

Commitment

Commitment is the connection between our values, intentions, and actions requiring insight, self-awareness, passion, and persistence (Gordon, 2001). Teachers are committed to lead, direct, and inspire students to do their best. It is the basis of motivation to accomplish one’s goals. Commitment with passion and motivation is the scaffolding for realistic goal setting. Sorgen (2013) stated that reachable goals are “firm, well-defined, and to which the person is truly and completely committed. Without that commitment, trying to reach goals is like grabbing Jell-O—you think maybe you have it, but there’s really nothing to hang on to.”

In his article about employee commitment necessary for organizations and managers to succeed, Fracaro (2005) quotes Bragg (2002) in listing the four types of employee commitment. The four types of commitment noted are as follows:

1. “Want’ to commitment;
2. ‘Have to’ commitment;
3. ‘Ought to’ commitment;
4. ‘Uncommitted” (Bragg, 2002.)

Of these four types of commitments the first one “Want to” was the most desirable because it designated employees who were loyal, had positive attitudes and were willing to accept additional responsibilities if necessary for the good of all (Bragg, 2002). The “Want to” commitment is the type needed by both teachers and students to assure success in the class room environment.

Setting goals in the classroom with teacher and students involved will enable classroom management plans to function successfully and strengthen the commitment made by both

parties. Setting goals will give an individual or a group such as a class “long term vision and short-term motivation especially if using the SMART Goals mnemonic:

S=Specific or significant;
M= Measurable or meaningful;
A= Attainable or action-oriented;
R= Relevant or rewarding;
T= Time-bound or trackable” (Mindtools, 2013.)

Other helpful suggestions to use in setting goals either personal or group goals include writing the goals down as positive statements, keeping goals small and achievable, setting performance goals over which you have control not outcome goals, be precise in stating goals, and set priorities for attaining the goals (Mindtools, 2013).

Critical thinking

According to Beyer (1995) critical thinking is common sense reasoning or “reasoned judgments while Paul and Elder (2006) state that it is “the art of analyzing and evaluating thinking with a view to improving it.” Moon (2008) states that “critical thinking is as aspect of the activity of thinking... a form of learning ... a means of generating new knowledge by process existing knowledge and ideas ...it is a ‘multiple ‘ tool for the manipulation of knowledge.”

There are numerous critical thinking skills presented in the literature, one by Price (2010) assessed four skills used by university teachers and professors. These included “Cats Method or Classroom Assessment Techniques, Cooperative Learning Strategies, Case Study/Discussion Method, and Using Questions” and discovered that “novice” or younger teachers used the first two the most and that “seasoned” or older teachers tended to use the last two almost exclusively (Price, 2010).

To many educators the term critical thinking equates to problem solving which is according to Kellough and Kellough (2007) “the ability to recognize and identify problems, to propose and to test solutions, and to arrive at tentative conclusions based on the data collected.” Guidelines to problem solving are proposed by Butterfield (2013) as “defining your data needs, examining your existing data, documenting data and sources, being cautious [sic] in estimating your knowledge about the subject, relying on others (experts, sic) as important resources, and considering the interrelationships of the data.”

Summary

Teachers and students can work together beginning on the first day of class to make the course and year flow smoothly with reduced stress and frustration for all by utilizing the Five “C” Model to advance education that matters whether in a kindergarten or university classroom. Each of the five areas can be used regardless of the overall subject matter to be covered. The classroom challenges of student boredom, lack of focus, whether

motivational issues, and distractions technological such as iPads, iPhones, etc. or non-technological can be met and conquered to the satisfaction of all by incorporating the Five “C” Model: Common Courtesy, Communication, Common Ground, Commitment and Critical Thinking into the classroom.

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Interactive White Boards and the Classroom

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Abstract: In a small research project the potential of the IWB for creating interactive learning in Norwegian primary schools is explored. The main question we will discuss in this paper is *how teachers think that learning is encouraged through the use of an IWB* in classroom teaching. To answer the question, teachers were interviewed and their teaching was observed. The teachers all agreed that the use of IWB was motivating and did activate pupils in most subjects and at all ages. This was confirmed in the classroom observations. However, the teachers did not give the pupils control over the technology and we did not observe any *conceptual interactivity*. We mainly observed *technical* and *physical interactivity* in classrooms with IWB. This might be due to the preferred learning style of the teachers and/or a result of the short period these teachers have been working with an IWB.

Keywords: Interactive whiteboards, learning dialogue, primary schools, teachers' attitude

Introduction

During the past decade, Norway and many other countries have experienced that efforts to integrate information and communication technology (ICT) into most aspects of school practice has received massive attention. The underlying motives for this focus on ICT applications in schools and colleges are three-fold. Firstly it is believed that ICT can contribute to a more rational organizing and running of educational institutions which is comparable with the motives of introducing ICT in private and public enterprises. Secondly it is widely accepted that competence in handling ICT is a required and important asset of citizens in modern society. Digital literacy is considered important and equal to other more traditional competences such as reading, writing and mathematics. This view is clearly reflected, among other places, in the white paper "Culture for Learning" ,which emphasizes that achieving digital literacy is a goal in itself and pupils in elementary and secondary schools should receive systematic training in the use of ICT (UFD 2004). Thirdly, the plans for introducing ICT in Norwegian schools is motivated by the assumption that the active use of ICT is not only a goal in itself, but a means of supporting pedagogical processes which will contribute to an enhancement of learning outcome in most subjects. A wide range of research findings indicate that both the teachers' role and their pedagogic practice and the pupils' views on ICT-supported learning processes are critical factors for the successful implementation of such learning processes (Wikan et al. 2009). It is of vital importance that the implementation of ICT-supported learning processes focuses directly on enhanced understanding of the interaction between teachers, pupils and technology.

Pupils are used to being surrounded by computers, cell phones, I-pads, games etc, and are used to being instantly online. The increasing popularity of touch-screen technology means that the pupils are familiar with this technology as well. They have grown up with digital artefacts but whether or not this has a bearing on how they learn or how they expect classroom learning to be offered is not known. Some researchers believe there is a distinction between those who have learned digital tools in adulthood and those born into the digital world. Terms like *digital immigrants* and *digital natives* are often used to designate the two groups (Prensky 2001). In other literature this generation has been referred to as the *Net Generation* (Tapscott 1998) and the *Millennials* (Howe & Strauss 2000) and more precisely defined as those born on or after 1982 (Oblinger 2003). The first group is most accustomed to doing one task at a time, linear work, and prefers the written text. The second group is characterized by multitasking, non-linear work style and uses a combination of media, text, images, audio, etc. For the digital natives it is also natural to have large digital networks. It is natural for them to use the network when they are seeking information or producing texts, often multimodal texts. Many are more occupied with expressing themselves and creating knowledge than listening to what the teacher says (Wikan et. al 2010). They learn more from research and testing than systematic reading of such a text in a textbook. They rely on communication technologies to collect information and to collaborate with others (Oblinger & Oblinger 2005).

Other researchers argue that there is no evidence for supporting an existence of the concept of digital immigrants. Children and young people are not the most frequent users of technology, rather the 35-44 year olds are (Bayne & Ross 2007). Further, while we think that pupils are constantly online and engaged in a variety of activities, surveys of pupils' use of technology suggest that most are engaged in social networking, but only a small number are engaged in the production of knowledge. Beyond the most common uses of technology, pupils' experience of technology varies widely (Bennett & Maton 2010; Kárpáti 2009; Wikan et al.2009).

For teachers it is a challenge to capture the interest of the pupils and to help them to learn. How can teaching in the classroom change so that it is more varied and even includes digital artefacts and the possibilities that ICT opens up in order to support learning? One option is to look at the classroom as a collaborative venue where teachers and pupils interact to create meaning, knowledge, skills and expertise.

How can the IWB support a genuine learning dialogue?

At the core of the classroom use of interactive boards is precisely the potential for increasing interactivity between all parties in the classroom in order to promote learning. The teacher gets access to sources and a flexibility to support and investigate ideas that come up during lessons. A potential for creating a *dialogic space* is created (Mercer et al 2010). The particular strength of the board is to “offer strong support for cumulative, collaborative and recursive learning.” Its effective use by teachers, can provide

appropriate scaffolding to help create knowledge through opening up dialogic space” (Hennessy, Mercer & Warwick 2011:483).

Two concepts support the concept of dialogic space. One is the Inter mental Development Zone (IDZ), which is the common communication space that must be established between teacher and pupil for learning to take place (Mercer & Littleton, 2007):

For a teacher to think and a student to learn, they must use talk and joint activity to create and negotiate a shared communicative space, the IDZ, which is built from the contextual foundation of their common knowledge and aims. In the ‘bubble’ of this Inter mental Development Zone, which is reconstituted constantly as the dialogue continues, the adult and the child negotiate their way through the activity in which they are involved (Mercer and Littleton 2007:21).

The second concept that also belongs in the 'dialogic space', according to Mercer et al (2010) is the Zone of Proximal Development (ZPD) (Vygotsky 2012). This is about what appropriate learning challenges are for a pupil and how the pupil can be supported in learning by an adult or a more competent fellow pupil. The concept of scaffolding is central.

Studies that have looked at how interactive whiteboards are used by the teacher in the classroom indicate that there is an analytical distinction between the three types of interactivity: *technical interactivity*, *physical interactivity* and *conceptual interactivity* (Mildenhall, Marshall & Swan 2010). *Technical interactivity* means that it is the teacher who uses the tablet's various interactive opportunities. It may help learning by making the lessons more interesting (Kennewell, Tanner & Beauchamp 2008). *Physical interactivity* means that pupils will be invited forward to touch the board, write on the board etc. *Conceptual interactivity* means that through this technology pupils along with the teacher support each other (scaffolding), interact, share and construct understanding together (Mercer et al. 2010b). Sundberg, Spante & Stenlund (2011) differentiate between technical interactivity and pedagogical interactivity, and find that teacher training should include both technical instruction and pedagogical options in order for the teacher to be able to fully apply the potential which is in the technology (cf Nes & Wikan 2013).

But are teaching strategies really changed in classrooms with interactive boards, or do traditional classroom patterns prevail? Studies reveal that the latter happens unless there is a conscious focus on using IWBs to promote interactive teaching (Beauchamp 2004; Blau 2011; Twiner, Coffin, Littleton & Whitelock 2010; Wikan & Mølster 2010). Common forms of teacher -guided instruction can fairly easily include IWB in the teaching style (Digregorio & Sobel- Lojeski 2009 - 2010; Smith, Hardman & Higgins 2006). In the short term IWB can improve learning outcomes through increased motivation, but developing common knowledge requires more long term genuine interactivity (Jones, Kervin & McIntosh 2011).

The impact of IWB as well as of other types of digital technology and learning material depends on the teacher's ability to utilize the potential to stimulate learning (Kennewell & Beauchamp 2007). However, it is observed that the IWB technology is so flexible that it makes it possible for the teacher to create a room for investigation and dialogue more than do other technologies (Mercer et al., 2010). To create such a learning environment it is important that the teachers are willing to allow pupils to take control over the technology (Gadbois & Haverstock 2012). In addition to the boards there are also a number of contextual factors that are important to keep in mind. It is essential to have a school culture that supports dialogic learning, teacher training is important, and time is important - it turns out that it takes two years before a teacher can fully exploit the interactive potential of the technology (Hennessy, Mercer & Warwick 2011; Deaney, Chapman & Hennessy 2009; Warwick & Kershner 2000).

Methodology and results

Seven teachers in different primary schools were interviewed in this study. The interviews were semi-structured and closely linked to observations made in the teachers' lessons (cf Thagaard 2003). The teachers were randomly and voluntarily recruited from partner schools in the teacher education programmes of our college. Some of the teachers had been familiar with the IWB for a long time, some not. Photographs from the lessons we had observed provided contextualising data (cf Hennessy & al. 2011). We developed an instrument based on the "Student Membership Snapshot" (Rivers, Ferguson, Lester & Droege 1995) for the classroom observations, where categories for technical, physical and conceptual interactivity were listed. In the analysis and presentation of results all school and personal data have been anonymised. Even if the teachers included both men and women, all informants are referred to as female in order to maintain anonymity.

Below we will present three of the teachers to illustrate our findings, since these three in our inquiry represent the typical classroom teachers in typical classroom situations. In Nes and Wikan (2013) these and other empirical examples of IWB use are further discussed.

Case1. Grade 2 pupils.

We are observing the first lesson of the day and Norwegian language /grammar is the subject. The teacher is a confident IWB technology user. She has used IWB in his classroom teaching for two years. She has not attended any formal training in IWB and teaching – neither technological nor pedagogical.

The lesson starts with the IWB switched on. It is a whole class setting and the screen shows the name of the pupils. Each pupil is invited to come forward, find her/his name and drag the name into the box "present today". All pupils concentrate on the board. Next phase; the teacher is at the board – date, season, morning song are on the board. She is asking questions; pupils are responding. Today's learning objectives are opened on the screen. The teacher is at the board taking and presenting the lesson. She is checking up on the pupils' understanding by asking question. Sometimes she asks the class in general,

sometimes specific pupils. The pupils are competing to answer- there is no discussion between the pupils or between teacher–pupils. The pupils are very concentrated during this sequence that takes about 20 minutes. The lesson continues with group work /station work. One of the stations is at the IWB. The teacher has loaded up on the screen an interactive program which challenges the pupils to use the correct grammar. The teacher asks questions, the pupils are taking turns individually on touching the screen and finding the correct answer.

In the interview the teacher says that having IWB in the classroom enhances learning outcomes because it enables the pupils to stay active by getting instant feedback, either from the board or from her. She thinks that IWB works differently from PCs in the sense that the PC is for individual use, while the IWB is supporting group work or whole class learning. Thus a group or the whole class can work together in finding solution/answer to a problem We asked the teacher to give her opinion of the advantages of having an IWB in the classroom and to share her pedagogical objectives. She compares teaching in a classroom with IWB to taking the pupils out of the classroom. She argued that with IWB she can give many and concrete examples, like pictures and the pupil can feel the subject by touching the screen. She uses the IWB in all subject matters. Various sources of learning material are used, either prefabricated for school subjects on the internet or from publishers, from the producer of the board, or from colleagues, and the teacher even is creating her own learning material. In her opinion the board works well at all grades but is especially well suited for the lower grades, as it facilitates inclusion of the pupils in the lessons in various ways. In the beginning it was more time consuming planning the lessons with IWB, but after a while she finds that it actually is time saving, because much of the same learning material can be used over again and learning material easily can be transferred to a new setting, new subject or grade/group.

Case2. Grade 5 pupils.

The morning lesson in grade 5 has English as its subject. The pupils have just recently been exposed to IWB. The teacher is a very experienced teacher and has worked with ICT in the classroom for more than 10 years and with IWBs for almost four years. She has formal training in ICT and learning. However, she has got little training on the use of IWB. But she has attended one course at Interactive Norway and learned from demonstrations given by other teachers. She has in addition used YouTube to get ideas on how to best use the board in the classroom.

The learning objective of the lesson is English question words. The lesson starts with the whole class. The teacher is in front using to repeat from last class and homework. She is using the IWB, asking questions to the pupils, they are answering, she is evaluating the answers. The next phase is also in the whole class setting – she is still in front using the IWB to talk the pupils through the stations work in groups that is coming up. She is not trying to get at dialogue with the class or individual pupils. The station work starts. One of the stations is in front of the IWB; the teacher stays at that station. On the screen is now an

interactive program and the pupils are supposed to find the correct answer on each question. The teacher is leading this by asking for the correct answer, she mostly approaches pupils by name. The pupils are allowed to touch the screen and drag the correct answer into place. With one group she is asking the group members to discuss and find the correct answer before one of the approach the board. They discuss but it is more of the form of completion than listening to and building on each other's ideas.

After the lesson we asked the teacher to elaborate on the use of IWB in classroom teaching and learning. She finds that the IWB gives excellent opportunities to support learning in different modalities, both teachers centered and pupil centered learning style. This is an advantage over individual use of PCs. The board opens up for cooperation, problem solving and pupils as producers of knowledge. She can use the IWB in all subjects but finds it very useful in math, foreign languages, social and natural science as well as 'religion, philosophies of life & ethics' because in all these subjects being concrete, giving examples, showing pictures etc are useful in order to enhance learning. The board can be used at all grades, it is flexible and thus is easy to adjust to different individual or groups needs.

The teacher thinks that IWBs have the potential to support enhanced learning because she can visualize, she can concretize, she can support pupils in taking active part in the lessons and they can learn to cooperate. Another advantage of the board is that it actually helps me keeping the pupils concentrated on the same object, she says. The board also supports different learning styles, and challenges her to plan more for pupils being active and to cooperate during class in order to solve problems. Thus, the lessons are different in classrooms with boards than in classrooms without interactive boards. She finds that she spends more time planning the lessons than before; this is especially true when she needs to create her own learning material for the IWB.

Case3. Grade 1 pupil.

This is another morning lesson, and the subject is literacy. This is a young teacher who is not very experienced. She has attended one basic course on the use of IWB. However, she did not learn much from the course, but claims that she has learned to use the board by trial and error. She just started to use it, and slowly she has developed her own style.

The lesson starts in a whole class setting. The pupils are sitting in a semi-circle in front of the teacher and the IWB. The teacher is loading up songs and they all sing together – a literacy song. She is thereafter loading up a blank lined side and asks the pupils to produce words with the Norwegian letter Ø. The pupils answer individually, the teacher writes on the board. Next she shows a program from the publisher of the text book: a text about the letter Ø that the pupils are listening to. A new page is uploaded by the teacher and she asks the pupils to take turns coming to the board to find the correct answer. They are listening and watching carefully and sitting very quietly. This was a long sequence, 40 minutes. The sequence closes by the class together with the teacher identifying learning aims on the

board, and the teacher indicating what to work on in the children's individual exercise books. The rest of the lesson is individual work.

In the interview the teacher says that she uses IWB in all subjects and all classes. However, she finds it is especially useful in math and initial literacy. In these two subjects there is much available premade learning material for IWB produced by the text books publishers. For instance in counting, she can let the pupils start for instance with concrete blocks on their desks, then she can open the interactive board showing the same blocks and the pupils can touch and drag to find the right answer. By sequencing the lesson in this way I challenge all the pupils' senses, she says; that will enhance learning for more pupils. It is very important at the lower grade to use a variation of modalities and she therefore finds the board so useful at the lower grades. She concludes: "I do not plan my lessons differently when I work with IWB; the focus is the same – on learning outcome and not the technology. Working with so young pupils, the most important is to be as concrete as possible, they must feel, see, smell and touch. And I do think that is what enhances learning, not the IWB. However, the IWB opens up for more varied lessons and is also an easy helper in order to vary the angle of the lesson and to motivate the pupils to stay focused. My pupils like the IWB so much".

These three cases have more or less showed the same pattern of interaction between the teacher and pupils and the same way of using the IWB. Most of the lessons we observed started with the teacher in front of the class and in charge of the interactive white board – this is typical examples of technical interactivity. How the teacher used the board and how much she/he invited the pupils into talking varied. In most of the lessons we observed that physical interactivity was an integrated part of the lesson, meaning that pupils were invited to approach the board and touch it. Lesson 2 shows a typical example of this. It is the teacher who is in charge of the activity – she asks questions, pupils are responding and are invited to come and drag or touch the right answer. In one situation in this lesson we did observe that the teacher tried to encourage pupils to cooperate in order to solve the problem, which is a requirement for conceptual interactivity.

Discussion of findings

The teachers say that having IWB in the classroom enhance learning outcome because it enables the pupils to stay *active and get instant feedback* either from the board or from the teacher. In most of the lessons we observed that *physical interactivity* was an integrated part of the lesson, meaning that pupils were invited to approach the board and touch it. It is, however, the teacher who is in charge of the activity – she asks questions and pupils respond and are then invited to come and drag or touch the correct answer. The questions the teachers asked were lower-order questions, and the dialogue by and large followed the typical classroom pattern of initiation-response-evaluation (IRE) (Bellack & al 1966). Compared to the IRE pattern, however, the physical aspect of touching the screen is an added value as it helps the children to *stay focused* on today's

subject. The pupil can move, walk and be physical, and for young pupils that is good. When standing in front of the board they are also seen by classmates and the teachers, a fact which is regarded by the teachers as an asset well.

Another advantage of the IWB is the way it enables the teacher *to visualize, concretize and vary* the teaching. On the board the teachers can exemplify through pictures and films etc., and by use of the tactile aspect. One teacher compares it with outdoor teaching. The teachers also find that the IWB gives excellent opportunities to support learning in different modalities, both teacher-centered and pupil-centered learning style. The board opens up for cooperation, problem solving and pupils as producers of knowledge.

According to our informants, the board works well at *all grades* but is especially well suited for the lower grades as it opens the option to include the pupils in the lessons in various ways. Whether or not planning lessons with IWB is different from planning for a classroom without IWB is non-conclusive in our material.

The teachers like to work with the IWB but they find that they use more time planning the lessons than before. This is especially true when they must create own learning material. One of the teachers added that in the beginning it was more time consuming planning the lessons with IWB but after a while it actually is time saving. Because she can use much of the same learning material over again and it is easy to transfer learning material to a new setting, new subject or grade/group. Some teachers mentioned that it is important to have an IWB in all classrooms. Only then can they plan all their lessons being sure that the artifact is available. That will be helpful and save time in the long run.

We have observed much technical and physical interactivity and hardly any conceptual interactivity. A typical situation is that the teacher is in charge of - and much of the time in front of - the interactive white board. In a whole class setting pupils are often asked to come forward and touch the board and find and/or drag the right answer in place. We have also observed more active physical interactivity during station work in smaller groups. However, there is usually little, if any, discussion, and the teacher is not challenging the pupils to find an answer collectively before coming forward to the screen.

Hence our findings are in accordance with most research: the IWB supports physical and technical interaction but does not as an artifact in itself lead to conceptual interaction. It has the potential, but it is up to the teacher to mobilize this potential and transfer it to the classroom setting. From the interviews with the teachers we noticed that some of them had the dialogue as an aim and saw the potential that the IWB had to stimulate the dialogue. Some teachers also appreciated the potential the board gave for flexible learning approaches. However, the teachers were not prepared to allow the pupils to take control over the technology, which is necessary in order to stimulate knowledge

production. On the contrary, one teacher underlined that it must be the teacher who plans how the IWB should be used in the classroom.

We observed mainly teacher-lead lessons in the classroom. However, it will not be correct to say that the interactive boards have no other effect in the observed classrooms than to support traditional teacher-oriented teaching. We saw young pupils who were *very motivated*, they *stayed concentrated* on school work for a longer time than one could expect, and we did not observe that any pupils dropped out. Much of the learning material is colorful and lively, and combines figures, sounds, letters and short movies. Some critics claim that the motivating effect is only temporarily. It is too early to tell if this is the case in our material. However, the IWB technology is easily conquered by the young pupils due to their familiarity with touch technology and multimodal media. The IWB seems to be helpful in keeping the pupils focused and in keeping the class together. We also observed the same positive effect when used in situations with pupils with learning difficulties. According to the teachers, the IWB helps to differentiate the lessons and reach all pupils irrespective of ability, even the young and marginal pupils and those with a language minority background. This is highly valued by the teachers in the heterogeneous classes of the Norwegian inclusive school.

To sum up, the use of IWB for differentiating teaching and for motivating and activating pupils is frequent and much appreciated in most subjects and at all ages in the primary schools we visited. The touch-screen technology is familiar for most young pupils due to the popularity of I-phone and I-pads in Norway. However, the teachers did not give the pupils control over the technology and we did not observe any conceptual interactivity. This might be due to the preferred learning style of the teachers and/or a result of the short period these teachers have worked with an IWB in their classroom. The question is, how can the teachers be supported in further development of teaching practice with the interactive board, drawing on theory and research about IBW and for instance the dialogic space? Good & Brophy (2003) offer some advice:

... as a teacher, you need to integrate the theory, research, and concepts (..) with your own personality and teaching style and apply them to your teaching context. You must go beyond theory and research by reflecting on your earlier experience as a learner, your beliefs about what appropriate teaching is, and your actual teaching experience, as well as by learning to use other teachers to gain insight into their teaching. (Good & Brophy 2003:471)

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Primary and pre-primary education

A comparison of Kindergarten Teacher Students: On-campus/full-time versus flexible studies

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Abstract: The student role has changed during the last decades. Students are increasingly combining studies with other commitments, such as paid work or family obligations. Traditionally the typical student was a full-time campus student, with no obligations regarding paid work or family. Hence to offer lectures every day during day-time was uncomplicated. Today studies are organised in many ways but the buzzword is flexible. This paper examines whether differently organised study programmes attract different types of students. Factors which are included are background variables, i.e. demographic factors and academic background. Data was gathered in a quantitative study. 278 kindergarten teacher education students in a Norwegian University College completed structured questionnaires. The students were compared according to whether they were enrolled in a traditional campus program or a flexible organized program. The findings confirm that it is a relationship between organising of study and student characteristics. Students attending flexible studies are older; more often have their own family and more seldom come from an academic background.

Keywords: Student, study programme, flexible studies, kindergarten teacher education

Introduction

The student role has changed during the last decades. Students are increasingly combining studies with other commitments, such as paid work and/or family obligations (Alltree and Quadri 2007). Full-time students are increasingly working part-time (Beerkens, Mägi and Lill 2011; Hall 2010). This situation of course often implies problems regarding time allocation. Responsibilities outside study impact both upon the amount of time available for study and upon what time it is possible to do study work. Regarding students with children, a study from UK finds that universities have a tendency to ignore students' conflicting demands of home and study (Bowl 2003). Students with own family have different needs from traditional learners.

As a consequence of a new student role we have seen that study time among full-time college students has declined (McCormick, 2011). It seems probable that less time to study means weaker study results. However, the correlation between study time and

performance is complicated, and empirical research in this field is inconclusive (Nonis and Hudson 2010).

Traditionally the typical student was a full-time campus student, with no obligations regarding paid work or family. Hence to offer lectures every day during day-time was uncomplicated. Today studies are organised in many ways but the buzzword is flexible. Studies may be offered decentralised; faculty moves to students. Another way of offering flexibility is that lectures are taught at different times of the day, for example in the evenings or at Saturdays. Yet another way is offering studies based on online facilities. Net-based tutoring seems to be popular among students (Bugge and Wikan 2013). Lastly a combination of net support and classes at campus can be a way to offer an educational program. Study programmes are composed in several ways combining these factors.

There could be several reasons for the wish of differently organised study programmes. One reason may be the desire to find better ways of learning, which was the case for the development of a new model of study using flexible delivery methods in an Australian university (Chalmers 1999). Another reason could be to find less expensive ways to offer a study programme. Furthermore it could be argued that different organising could attract more students, and/or other types of students, and even make it possible to study for persons not able to do so if only traditional classes were offered. Students from low socio-economic backgrounds facing problems with physical access to university campuses due to commitments on work and family are helped by flexibility in course study opportunities (Elliott 2010). In a U.S. literature review Lei and Chuang (2010) recommend to offer flexible programme requirements to meet graduate students' demands. Even though, we also have to bear in mind that for example regarding distance courses, studies find that the potential flexible benefits were being encountered as challenges in students' lives. Many learners had difficulties in combining flexible learning with existing familial and employment roles (Selwyn 2011).

In many countries we see a growing competition among institutions in higher education. In the United States higher education consists of a sharply hierarchical system with a range of institutions from richer to poorer (Winston 1999). In UK higher educational institutions are highly differentiated regarding resources and status (Leathwood 2004). The funding of universities is dependent on the number of students, hence recruitment is urgent. As mentioned above one of the reasons for the diversification of study-organising is an attempt to design study programmes that would fit students with different prerequisites. But how well-documented is the assumption that organising of study programmes is a factor that has a bearing on students' study choice?

In the present article we investigate whether differently organised studies attract different types of students. We will study background variables, i.e. demographic factors and academic background.

We will compare kindergarten teacher education students attending the same professional education programme at the same university college, but enrolled in differently organised study programmes. One group of students attend a traditional campus programme, the other group a flexible organised programme.

Methodology

Data was gathered in a quantitative study using structured questionnaires. Questionnaires were administered in May 2011 and between February and April 2012. Questionnaires were administered during compulsory lecture time. All students present on that occasion completed the questionnaires, which were collected immediately. Either one of the researchers or the lecturer in charge administered the data collection.

The questionnaire includes background variables (sex, age, living situation, parents' education, stream and grades from upper secondary school), reason for study choice, notes, evaluation of study programme, study progress, time used on study, time used on paid work and other activities, motivation for study and questions on finances.

The respondents are students at Hedmark University College, Faculty of Education and Natural Sciences. They attend Kindergarten Teacher Education Programme. In total 278 students completed the questionnaire; of these 168 are full-time campus students and 110 are flexible students.

The students range from first year students to third year undergraduates. The response rates were 89 (campus) and 88 (flexible). Compared to other studies the response rate is high, which strengthens the significance of the findings. However, given the objective of the study we must discuss the consequences of the missing students. If those who were not present when the questionnaires were administered are students differing regarding for example sex or age, this might influence the findings. However, we are not able to tell if the non-attendance is systematic.

Kindergarten Teacher Education

The purpose of the Kindergarten Teacher Education is to provide qualified personnel for educational work with children up to age six attending kindergartens. The Kindergarten Teacher Education is a three-year course of 180 credits. The course includes a compulsory component of 150 credits and an elective component of 30 credits (Kunnskapsdepartementet 2013). The national curriculum regulations constitute a mandatory basis for the institutions, staff, students and practice kindergartens. On this basis, the institutions develop a *course curriculum* in cooperation with students and practice institutions. The curriculum shall provide an outline of the course as a whole and shall contain a practical training plan, individual subject/subject area syllabuses (for both

compulsory and elective course modules) and syllabuses for interdisciplinary course modules. It is up to the institution to stipulate the number of teaching hours, how much compulsory attendance and compulsory work, and how to grade the students.

Hedmark University College has developed differently organised programmes for Kindergarten Teacher Education. The campus model implies a course curriculum where much of the education is compulsory for the students to attend. In addition the weekly schedule is quite full; it is up to 18-20 hours a week with lectures and seminars. The flexible studies consist of part-time study (three years full-time study during four years) or full-time study comprising gatherings combined with on-line facilities. The flexible studies imply more individual opportunities to schedule the week according to personal requirements.

Student characteristics

As stated above today's students are a far more diverse group than some years ago. We will now analyse whether students with different backgrounds choose differently organised studies. As a starting point we investigate whether there are differences between flexible and campus students regarding sex and age. Then family situation and academic background are studied.

The majority of the kindergarten teacher education students are female, even more accentuated among flexible students (table 1). It is not surprising that Kindergarten Teacher Education mainly attracts women, regardless of way the program is organized. Females have always dominated Norwegian kindergartens. Last year, 86% of students in Norwegian Kindergarten Teacher Education were female (Statistics Norway 2012).

Flexible students are older (table 1). Only 14% of flexible students are 24 years old or younger, among campus students the corresponding figure is 76%. This corresponds to a different family situation, 38% of campus students live with their parents, while this is the case for only 7% of the flexible students. In line with this we also see that about one out of ten campus students have own children, compared to three of four flexible students.

Campus students more often come from an academic background, that is; at least one of the parents has higher education. 55% of campus students have at least one parent with higher education, compared to 38% of flexible students (table 1).

There are two streams in Norwegian upper secondary schools, an academic stream and a vocational stream. The first qualifies directly for higher academic studies. Students from vocational streams can be admitted to university studies if they take one extra year to

catch up on vital theoretical subjects. We find a tendency towards a higher proportion with academic stream from upper secondary school among campus students (table 1).

Table 1. Student characteristics. Percentages (N)

	Campus (N=168)	Flexible (N=110)
Women	85	92
<= 24 years	76	14
Live alone or with parents	38	7
Live with children	12	75
At least one parent with higher education	55	38
Academic stream from upper secondary	59	49

Conclusion and discussion

In the article several factors have been studied to investigate whether differently organised studies attract different types of students. We have compared kindergarten teacher education students attending different study programmes. All students take the same professional education, but the extent of flexibility in the study programme differs.

In the present study we find a relationship between organising of study and student characteristics. The students who attend regular campus programmes are younger, have more seldom own family, more often come from an academic background and there is also a tendency that campus-students more often have chosen academic stream in upper secondary school. The campus student in many ways seems to be a traditional, young student. On the contrary the typical flexible student is older, has a family of his/her own and tends to have a less academic background. Based on the findings of this study it seems likely that differently organised studies attract different kind of students. At Hedmark University College the flexible Kindergarten Teacher Education Programme seems to fulfil the intention of offering an education to students who do not have the possibility of a traditional full-time student-life. Furthermore, the flexible programme does not compete with the campus programme regarding recruitment, as we have seen the two groups of students are quite different.

Our findings partly support findings in other studies. Lei and Chuang (2010) find that older students are more often employed and hence are influenced by factors allowing them to study part-time. This corresponds to our finding that flexible students are older than traditional campus-students. Selwyn (2011) in his study of distance learners finds that studying is bounded by social relations, like gender, class, age etc. In our sample flexible students tend to have more commitments in their everyday life, and hence could have difficulties attending courses offered at campus. This corresponds to the finding of Elliott (2010); most students in this study indicated that they had chosen an off-campus based

study model because this made it possible to study from home. In an Australian study the majority of students asked for more online facilities and more flexible timetables to facilitate the combination of study and paid work (Hall 2010).

The findings may be explained in several ways. Some students have a family situation that makes it difficult to move from home, hence a flexible study based on gatherings and internet could be seen as favourable. Younger students could be attracted by a more “school-based” study; this is what they are familiar with, furthermore this type of study perhaps also opens up for a more social student life. Flexible studies demand more self-governing students, which may attract elderly students primarily. Our data is not suitable to elucidate these considerations, further research is required.

Our findings are limited to Kindergarten Teacher Education Programme. Hence we are not able to tell if there are specific aspects about this programme which lead to our findings.

As long as a growing proportion of students have family obligations and paid work, this fact has to be taken into account. It seems reasonable to believe that universities continuously will develop study models designed to meet students’ demands. Flexibility in study situation gives a variety of students a possibility to attend higher education, and even might contribute to reduced social injustice.

Students with different social, demographic and cultural backgrounds will together create a rich learning environment. Student contributions based on different life experiences might enrich classes. Many professions could perhaps also benefit from newly educated persons with different life experiences.

The results from this study indicate that students in different phases of life carefully choose study programmes designed in ways that facilitates the combination family-study. By offering differently organised study programmes institutions meet a wide range of students’ demand. The scheduling of lectures, use of online support and possibility of part-time study are examples of conditions institutions can consider to facilitate studying for a wide range of students.

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English institutions and compassion –A new challenge for a renamed workforce

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Introduction

Dunn (1988) reminds us that human beings' pre-eminent intelligence is their social intelligence. It is our contention that the knowledge a 'knowledge economy' (Drucker, 1999) most needs is increased understanding/awareness of human interdependencies. It has been argued by Piaget, (1977) that for moral judgement to emerge a capacity to decentre is a pre-requisite. There is, now, compelling evidence that reciprocity, and the consideration of another's perspective, begins far earlier than previously anticipated (Braten and Trevarthen, 2007, Trevarthen, 2010). Indeed evidence suggests that humans are born with a capacity for kindness and reciprocity. If these capabilities are not fostered but subsumed within a culture of individualism (unique child) as currently manifest in the birth to 5 curriculum in England the social consequences can be severe for individuals and communities, and we discuss some relevant UK reports as below (signs of kindness lost).

Currently English public sector educational provision is subject to high stakes assessment, of both decontextualised legislatively controlled knowledge and professional standards. This curriculum, in conjunction with an onerous inspection strategy, combines to marginalise attention to compassion and kindness. The scope of English professional standards has recently been reformed to include a new teaching status that of Early Years Teacher – the, alleged, purpose being to *ensure those who work with babies and young children are increasingly skilled and professional*. (DfE, 2013)

This work reports professional action research undertaken by three very early years, educators working alongside two university academics. The focus of this work is has been on the promotion of kindness with young people aged from 6 months to about 3 years of age. In so doing we combine two under-reported areas in teachers' professional development. Firstly the promotion of kindness in English early childhood settings and secondly the professional development of educators working with the very youngest children.

We want to discuss an absence of kindness, and its close cousin, compassion, in both educational requirements and some aspects of public life. These absences have recently been fore-grounded in official UK government reports on care of the disabled, the elderly and the sick (e.g. Mid. Staffordshire National Health Service Foundation Trust 2013, Care

Quality Commission, 2012, National Institute for Clinical Excellence 2012, Vize 2012, Abraham, 2011, Equality and Human Rights Commission, 2011, Flynn, M. (2011) .

Engagement with ideas of compassion and kindness extend of course beyond England and the U.K. . For the purposes of discussion here we see kindness as a term articulated in early childhood practice (e.g. Noddings, 1984, Butcher and Eke, 2013a,b). These ideas can be found, for example, in U.S.A., Australian, India and by no means least Norway .The growth of Early Childhood and Care provision, in Norway, since 2005 is noticeable. In contrast to England the nature of provision and the scrutiny of the quality of provision in barnehagers is subject to some central expectations but, otherwise, devolved to municipalities. The potential for kindness is thus enhanced by opportunities for local engagement with a 'kindness 'curricula, for professionals to demonstrate and facilitate kindness, and by a more relaxed approach to children's early literacy and numeracy. The recent OECD review (Taguma et al, 2013) of early childhood provision in Norway presents a challenge to arrangements of this kind if they are to be protected.

In this paper we argue that a focus on kindness in early childhood education has four important characteristics. In our work with early year's educators we have formed a sense that kindness and another of its cousins, empathy, are not necessarily developmental. Our work also suggests that kindness when nurtured becomes cumulative. The neuroscience that informs our joint practice (initially we drew on ideas of developmental social cognitive neuroscience, (Zelazo et al ,2010) also indicates that an education in kindness enhances intellectual development (Cozolino, L. (2006). And finally our work indicates that a focus on kindness moves pedagogy from its official footing towards the local and tacit pedagogies associated with home learning. It is thus a more inclusive pedagogy.

Following from this we argue that if all young people were educated towards compassion through a curriculum which recognised the cognitive as well as social gains and pedagogues were trained to model, recognise and value kindness and compassion then a culture with increased confidence in the responsibilities and rewards of reciprocal care could emerge.

Kindness

In our view considering kindness ought to recognise that 'others may think differently from ourselves', 'other individuals also have agency' and 'we are interdependent on each other'. Some European philosophers grasped these ideas in the later 18th century. Smith, 1790, spoke of some principle in human nature, which interests individuals in the fortunes of others, and renders the happiness of others necessary to us, though we derive nothing from it, except the pleasure of seeing it. Smith goes on to say that compassion is of this kind. Rousseau,(1763), speaking specifically about children, recognised kindness as a pleasure or instinct of childhood. More recently Philips and Taylor (2009) defined kindness as a sympathetic expansiveness linking self to others and hence involving

thoughtfulness for persons. Following Noddings (1984) we can see it as defined through relationships. She refers to this as -one caring one cared for and anticipates the promotion of conditions that will permit caring to flourish. She also recognises joy as the basic human affect. It is recognition that moral decision making founded on caring requires concretisation rather than abstraction a premise we shall follow here. In this paper we shall be mounting a discussion of early childhood provision that seeks to link state provision with moral responsibility to the other .The ideas of Levinas (1974) have some purchase here.

While most neuroscientists appear to avoid 'soft terms' such as kindness, Haan and Gunnar(2009) or Legerstee et al (2013) for example , make no reference to kindness, it is arguable there are parallels in work on empathetic responses and inter-subjectivity in both. This argues an awareness of an 'other' begins in utero and develops further from birth. It appears therefore that there is a we-centric (see Gallese 2001, 2003) dimension in the experience of a given affective state. When observing someone else's facial expression, we do not understand its meaning only through explicit inference from analogy. The other's emotion is first and foremost constituted and directly understood by reusing part of the same neural circuits underpinning our first-person experience of the same emotion.

Signs of Kindness Lost

We believe that a loss of kindness is signified by recent events in England. In particular we would draw attention to rioting in English cities 2011, involving significant numbers of young people (London Riots, Communities and Victims Panel, 2012) educated under central government curricula requirements and inspection arrangements. We would also refer back to the cluster of reports which identified a lack of compassion in the care of vulnerable people. Additional signs can be found in the U.N. report cards on Children's Well-being (2000, 2010), in the work of Layard and Dunn (2009) and in official discourses of childhood in England (Ofsted, 2012).

Other commentators have also observed how control is exercised in the English system. Bates (2013, 41) observes, "In the education system, top down control is exercised through policy regulation, pupil targets, Office for Standards in Education (Ofsted) inspection." The most recent examples of policy interventions in English early childhood provision include The Early Childhood Curriculum (2012) and pupil targets (attainment), which provide a platform for inspection by Ofsted (Ofsted 2012) and the Early Teacher Status Standards (EYT, 2013) . These policy interventions can be criticised for their instrumental approach (Butcher and Eke, 2013a). In contrast to earlier iterations The Early Years Foundation Stage Curriculum (EYFS, 2012) demonstrates a reduction in the significance attached to children's sensitivity to others, which is not acknowledged until about 3.5 years of age. The overall impact of this revised curriculum has been to prioritise

a somewhat confined set of literacy and numeracy skills and to marginalise compassion and kindness.

Recognition of the professionalism of early years teachers in England through a new state endorsed Early Years Teachers status (2013) is both over-due and welcome. We found there were no EYTS standards linked to compassion and kindness. We also found there were three standards that **could** provide an umbrella for kindness:

- 1.3 Demonstrate and model the positive values, attitudes and behaviours expected from children.
- 2.3 Know and understand attachment theory, its significance and how effectively to promote it.
- 4.1 Plan balanced and flexible activities and educational programmes that take into account the stage of development, circumstances and interests of children.
-

Doubtless experienced early years professionals will find ways to 'smuggle' the development of children's kindness into settings. This behaviour will not be valued by the state through its revised inspection framework which appears to demand reporting on the contribution of the early years provision to the well-being of children (Ofsted, 2012, 12). None of the state controlled 'levers of change' in early childhood education have been deployed to promote kindness/compassion despite a singular absence of it in national life. Early years practitioners know that they must respond to:

- The priorities determined by the English Office for Standards in Education, which drive the inspection of work in most early childhood settings.
- National curriculum requirements
- Early years teacher standards
- Performance management in settings

We have already said that there are gaps in aspects of public life which should be occupied by conceptions of compassion and kindness. We have also identified spaces to be filled in the EYFS and in the EYT standards (see above).

There was no evidence of a concern with children's well being in the Ofsted reports on early year's provision we have read, we had assumed that if reference were to be made to kindness or compassion it would be reported under this inspection requirement. Neither were there any references to outstanding practice related to kindness and compassion. There was no recognition of the joy of affectionate learning. Nor was there any recognition of the training needs of those new to early childhood provision. It is as if there have been no disasters in the conduct of urban life, or the care of the vulnerable and hence no early childhood policy response is required. This would suggest a policy view, at the level of

curriculum requirements and quality assurance specifications, that isolates work with the youngest people in England from the acculturated life they are already living.

Signs of kindness found: Early Years Practitioners and collaborative research

We have been working with a group of experienced early childhood practitioners in a collaborative research project since 2011 (Butcher, Frawley and Eke, 2011). They were interested in the articulation of developmental, social, cognitive, neuroscience (Zelazo et al, 2010) with their own professional work. They were particularly taken with the writing of Trevarthen (2010) which led them to value joyful learning and identify routine tasks as special (precious) times. They also discussed how they defended precious times from trivialisation and developed subtle dual discourse training strategies. In later work we shared our interest in kindness. We were unable to find any recent publication directly relevant to this and so extended our search to include empathy. Drawing on Knafo and Uzefovsky (2013) the practitioners recognised and valued children's spontaneous acts of kindness between each other and between children and adults. They recorded them and shared them with others. We mapped these instances from their work with children from 5 to 36 months using Knafo and Uzefovsky's framework to categorise the form of empathy. We found their framework very helpful although we were unable to identify the clear progression reported by them. In our work inter-subjectivity was seen to under-pin every empathetic response. There was some see-sawing between inter-subjective (between infant and infant/ adult) and intersubjective with inter-corporeal (as above with a specific concern with bodily states –eg 'contagious crying') up to 12 months. From 13 months inter-subjectivity remained and was accompanied by inter-corporeal and emotional distress. From 16 months the children were inter subjective, and used affective knowledge mirroring maternal behaviour and making proto-vocalisations related to younger babies. From 20 months children were showing inter-subjectivity, inter-corporeal behaviour emotional distress, emotional concern and affective knowledge. From 24 months children were additionally employing a theory of mind. After 42 months we started to see evidence of the addition of meta-cognition.

Discussion

Narratives from our collaborative project, shows that children's capacity for kindness is alive by six months and is transformed during their experience with and of others. Our evidence did not demonstrate a clear linear progression nor, in our view, did children replace one kind of empathy with another. Rather they added additional responses to their existing repertoire. If we may slip from empathy to kindness then we can say that in a social context conducive to their exercise empathy and, probably, kindness are cumulative behaviours rather than developmental ones. In Cozolino's(2006) account he prioritises the insula cortex in co-ordinating limbic and cortical processes as well as somatic and visceral experience....linking hearts and minds and goes on to argue that compassion warmth and love have the power to change our brains (p315). We can now say that the kindness is

transformed by their experience and that kindness is good for you. We shall now move on to suggest that kindness can transform early childhood pedagogy and that this transformation is, potentially, beneficial to all.

Our work with colleagues and students (e.g. Masters, 2013) demonstrates that valuing kindness in an early years setting requires a discourse that brings the tacit and local pedagogies of the home into the classroom. (Bernstein, 1990) (Observed play-'are you feeling poorly sweetheart?' 'Lie down here sweetheart' a child's playful conversation with a student studying kindness). Here relational activity and talk (see also Hasan, 2002), brings the language and thought of children's home into the pedagogy of the professional through their engagement with kindness. Learning of children from diverse social and economic backgrounds is valued. A pedagogic concern with kindness reaches out to include the language and pedagogic experience of all children, not simply the majority.

Conclusions

- We have shown how an absence of kindness and compassion has infected a range of English institutions. We have argued that kindness is ignored by early childhood curriculum requirements, formal statements of early years teacher competence and high stakes formal inspection. Even so early childhood practitioners routinely cherish kindness and monitor, record and celebrate the kindnesses of children. They continue to reflect on the challenges kindness and its absence from official discourses place before them. We see this in contrast to Norway for example where the Care Plan (2015) recognises the importance of social competence which includes a capacity for empathy although the translated version makes no reference to compassion, kindness or affection.

In New Zealand Te Whariki their early childhood curriculum recognises that this curriculum is different from the school sector (not a diluted version of school?). This is also the case for the Norwegian curriculum, although we are mindful of the recent OECD report. (Taguma et al, 2013) It involves culturally mediated learning and values reciprocal and responsive relationships for children.

These examples confirm the viability of acknowledging what experienced practitioners know. If England needs a literate and numerate work force and this can be achieved through policy interventions in early childhood, and given that in English cultural life, there are signs of a lack of kindness, an absence of compassion, then, might this absence of kindness also be alleviated by explicit policy endorsement?

Why keep silent on kindness?

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[Nordic Childhoods and Early Education: Philosophy, ...](#) - *Einarsdottir* - Cited by 26

We can learn by comparison with Nordic countries

The Norwegian plan also states that in the area of religion and ethics, preschool should help children ([Q-0903B, 1996, p. 70](#)):

- gain insight into Christian basic values and their place in our cultural heritage;
- acquire society's established norms and values;
- get answers to religious questions and get the opportunity to wonder in silence;
- gain knowledge about the background and traditions of Christianity and experience the joy of the Christian festivals;
- live in a loving environment and learn to take responsibility for the immediate environment, her or his home, country and people, nature and culture; and
- develop interest in and respect for people with different cultural and religious backgrounds by organizing distinct cultural meetings.
- [Volume 1 Number 2](#)
©The Author(s) 1999
- A Comparison of the National Preschool Curricula in Norway and Sweden
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Professional development of teachers

Ethical Challenges in the Counselling Role

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Abstract: Ethics and professional ethics are words and concepts frequently used in daily conversation, but the understanding of the conceptual content can vary significantly. This work aims to address this by supplying material for a basic introduction to applied ethics in the workplace, i.e. professional ethics. Based on my professional field, counselling pedagogy, I want to focus on the ethical issues we face in the counselling role. Definitions for some of the most essential concepts and presentations of some key theorists are supplied. The counseling situation is often characterized by an asymmetry in distribution of authority and power which may introduce ethical dilemmas and challenges. We are experiencing an increasingly complex world of rapid changes and new technological opportunities. This calls for reflections on whether this generates needs for a higher level of ethical awareness in general, and more specifically in counseling situations.

Keywords: Ethics. Professional ethics. Counselling.

Introduction

The purpose of this article is to highlight selected basic ethical issues that may arise in educational institutions, and more specifically in counselling sessions related to this. Thus the focus is on applied ethics in specific situations of professional practice in the educational context, i.e. a part of professional ethics.

When we colloquially use the word "ethics" probably most people instinctively think this is about distinguishing what is right, good or legally from the opposite, what is wrong, evil or illegal. If we collect our own beliefs about such values and attitudes, we can say that they are our personal ethics. Naturally it is fundamental that beyond our individual ethics there must also be a common overarching ethical code for society as a basis for understanding of right and wrong or good and evil.

Ethical norms are required at different levels: We may have a set of ethical norms in the family, another at work and perhaps a further seen in society and so on right up to the global community. These sets of ethical standards may have some different content, but will generally have a core of common values. These are the values that we want to utilize for separating permissible from impermissible actions. In this article, we primarily focus on

professional ethics and then more specifically the ethical issues we face in the counselling role.

Definitions

Although many of the words and concepts we use when we discuss professional ethics are words frequently used in everyday language, it turns out that the understanding of the conceptual content can vary significantly. It can initially be helpful to provide some definitions of what is meant by the key terms used in this context.

Ethics

The term *ethics* has its origin in the Greek word *ethos*, meaning custom or habit. If we consult various reference books, we find ethics explained as moral teaching, principles for good behaviour, good interpersonal practice or moral philosophy. More detailed descriptions often refer to it as a person's norms and attitudes for word and deed. Such a perspective can also be described as a reflection of what is ethically acceptable in different situations and contexts.

Ethics is often divided into three parts: meta-ethics, normative ethics and descriptive ethics. Meta ethics is about seeing ethics in an overall perspective, analysing the content and meaning of the terms we use to describe and discuss ethics and ethical issues. Meta ethics also deals with testing the validity of theories and statements in the ethical field. In the literature we also find theoretical ethics and analytical ethics as terms for much of the same.

As the word itself indicates, normative ethics is connected to norms, meaning a set of values that it will be measured against. This approach to ethics will be based on the values and the standards applied and will often have a "should" or "must" dimension in the description of what is right and good. The ethical dimension will be how this will make an impact in permissible and impermissible actions and statements that are consistent with the values and norms that are applied.

Descriptive ethics will become a counterpart to this. Here the aim is to investigate what actually forms the basis for decisions and actions, and how this affects the moral code. The descriptive ethics does not decide what is right or wrong, but seeks to describe the ethical norms as neutral and objective as possible. Regarding professional ethics it may also be interesting to observe whether practitioners follow the norms and analyse the causes and consequences of deviation from this.

Moral

In everyday speech the words ethics and moral often are used almost synonymous. The word morale has also in a way a parallel origin, namely the Latin word *mos* meaning custom or practice. We can say that good moral is the practice of good custom or good behaviour. We tend, however, to separate the concepts in the way that ethics is the norm

for how morale should be exercised. Thus there is a kind of theory-practice relationship between the concepts of ethics and morality. Morale is how we act while ethics deals more with reflection on morale and how the moral norms are practised.

Professional Ethics

Professional ethics is, as the term itself indicates, how we connect ethics and ethical considerations to our professions. Most industries, trade associations and unions have different set of ethical standards that describe the normative requirements of morality in the practice of professions. In some cases, there is a grey zone or a gradual transition into what we can better describe as quality assurance, although the quality of the work can often be influenced by ethical considerations and it can clearly have consequences of an ethical nature. Professional ethics is in a broad sense how we relate to value-based decisions, how we perform our profession and how we reflect on the consequences of our choices.

An example of how a professional ethical basis can be designed is enclosed as Appendix 1 on the last pages of this article. "Professional ethics for teaching profession" was drafted and adopted by the Norwegian union "Union of Education Norway" ("Utdanningsforbundet") in 2012. This union organizes all kinds of educational staff in Norwegian schools and universities.

Consequentialism

Consequentialism, or Consequence Ethics, is together with Deontological Ethics, or "Duty Ethics", historically the two main schools of ethical thinking. Consequence Ethics is also referred to in the literature as Teleological Ethics after the Greek word "*telos*" which translates to "purpose" or "consequence". This is a direction in ethics that emphasizes the consequences of our choices and decisions. The main focus here is what the results are expected to be and less the background or purpose of our choices and actions. A typical argument from a consequentialist would be that the decisions that lead to the best results with the least negative consequences for most will be the right choice.

Deontological Ethics

The term Deontological Ethics is derived from the Greek word "deon" describing what we should do or what we are obliged to do. Therefore Deontological Ethics is also referred to as "Duty Ethics". It focuses on our moral duty as a basis for what we should do and the moral value of the action itself and less the consequence of the choice. Deontological Ethics is often based on something claimed to be universal and relevant in all contexts and will often be based on laws, regulations or rules.

Deontological Ethics in its extreme form used as the sole norm can lead to excessive focusing on each single action or decision. This can lead to almost ignoring the consequences of the action or the long-term effect of a sequence of decisions. The

philosopher Immanuel Kant has a clear basis in Deontological Ethics, but modifies it with a perspective that takes into consideration consequences beyond those of the individual action at the moment. He evaluates the actions and decisions based on whether they would be morally defensible as a general rule.'

Virtue Ethics

In practice, both Consequentialism and Deontological Ethics in its pure form have significant weaknesses and it has therefore been argued that a combination of these two will be needed to get a good working ethics. Such arguments are the basis for the development of Virtue Ethics, which seek a holistic perspective where not only consequences and duties but also emotions, attitudes and norms form the ethical basis.

This thinking inspired the way back to the Greek philosopher Aristotle and his virtues, with particular emphasis on prudence or wisdom, courage, temperance and justice. Among these wisdom was considered as the most important virtue in the sense of the ability to find moral solutions to everyday challenges and conflicts. This morality is based on the virtues, assumed here to be inherent characteristics of the individual, while also being influenced by the context, culture and beliefs about what is a good community.

Theoretical References

In the following we will be looking at some key theorists in the ethics field. A short article like this, however, allows only a brief presentation and reproduction of some selected key aspect. These theorists were engaged directly or indirectly with ethics. However they all contribute to the understanding of the ethical challenges that arise when people work in groups or organizations where they are dependent on interaction and communication with each other.

Martin Buber (1878-1965)

Martin Buber was an Austrian philosopher and theologian born into a Jewish family living in Vienna. He lived much of his childhood and teenage years with his grandparents in Ukraine. His grandfather Solomon Buber was a well-known teacher of the Orthodox Jewish community. Later Buber moved back to Vienna and took up studies in theology, philosophy, history and philology. He acquired great language skills including German, French, Polish, Hebrew and Yiddish. In 1923 he published his most famous work "Ich und Du", later translated into English as "I and Thou". In 1930 he became professor of ethics, Jewish religion and history at the University of Frankfurt am Main, but resigned his professorship in protest when Hitler came to power in 1933. In 1938 he found the situation so difficult that he moved to Jerusalem, where he received a professorship at the Hebrew University.

In his major work Buber outlines two types of relationships: "I-It relations" and "I-Thou relations", or "basic pairs of words" as it is also called. An "I-It relationship" attribute to the

other party a role as the subject, and Buber says: "'I-it' can never communicate with our whole being, while 'I-Thou' can only exist when communicating with our whole being. The last relation assumes an equal relationship as a basis for dialogue between people. In Buber's works dialogue, relationships and "the meeting" are key concepts. He will say that a real meeting between people requires an "I-Thou" relationship as indicative of two independent individuals who make free choices independently of the other.

Buber describes "the meeting" with the other as a daring event because they invest of themselves in this meeting. You may lose some of the control in such a meeting because you cannot predict what will happen in the relationship. The relationship is something new which cannot be generated unless both are participating. A meeting can touch us in our innermost and it can cause changes that will leave permanent impacts.

The meeting with the other is also an opportunity for such change. The two parties involved may provide confirmation to each other in such a way that it can be a venue for personal growth. The reciprocity that occurs in the meeting, may be of such a nature that the participants discover new possibilities and qualities in each other (Buber, 2007).

In such meetings, for example a counselling situation, we must be prepared for the unprepared. Therefore, courage is required for entering the arena where we may meet the unprepared and unpredictable. This arena includes challenges as well as possibilities both concerning ethical aspects and the effects of the counselling. In such relationships one must dare to get involved and to expose vulnerability, while being exposed to the possibility of change and maybe even being surprised by the other person's otherness.

Immanuel Kant (1724-1804)

Immanuel Kant is probably one of Europe's most renowned philosophers, but he also worked as a mathematician and physicist. He had his entire academic career at the University of Königsberg. Kant was born into poor circumstances in a Calvinist family of craftsmen, but distinguished himself in early years in such a way so that he got the opportunity to higher education. He received his doctorate in 1755 and was appointed associate professor at the university. In 1770 he became professor of mathematics and later he also became professor of metaphysics and logic and lectured extensively over topics that today we would characterize as belonging to philosophy and theology.

Kant had and still has a very large influence on ethics and philosophy and is possibly best known for his moral philosophy. He based his thinking about morality and ethics around trying to develop a universal ethical maxim. During Kant's very extensive writing he formulates his basic thinking in different ways that maybe best can be summarized as follows: I will always seek to act in ways that would be beneficial if applied as a general law. This implies both freedom and autonomy to make choices, but also a clear consideration about the impact of the choices. It is here therefore we find perspectives

that highlight the deontological thinking, but also point towards consequentialism. Kant is also well known for his division between perspectives "thing for us" and the "thing in itself". This is central to Kant's thinking, but beyond the scope for an article of basic concepts such as this one. The subject may be studied with great benefit in Kant's work "Critique of Pure Reason" (Kant 1781 - Original title: "Kritik der reinen Vernunft").

Knud Ejler Christian Løgstrup (1905-1981).

Knud Løgstrup was born in Vesterbro in Copenhagen. He studied theology and philosophy at Copenhagen University and received his doctorate in theology in 1943, and he later became professor of ethics and philosophy of religion at the Faculty of Theology in Aarhus, Denmark. Løgstrup was awarded an honorary doctorate both by the University of Lund and the University in Marburg. His approach belongs clearly in the field of ontological ethics. Ontology can be translated as "the present" or "what exists". Løgstrup develops his thinking from the approach that ethics is derived from the phenomena we can see and what we experiences in everyday life more than moral philosophy and principles which we will find as more central to Kant.

Løgstrup (1996) developed the term "sovereign expressions of life" a phenomenon that he sees as crucial in all relationships. He reviews these "sovereign expressions of life" as spontaneous, meaning that they are latent and activated by their own power. They are spontaneous because they are run by themselves, unforced and without ulterior motives. We are not creating life utterances; it is those that create us. In Løgstrup's thinking a fundamental expression of life is trust. Through trust we meet other people with positive confidence anticipating that what they do and say is meant to serve good purposes. On the other hand, by showing confidence we expose ourselves and make ourselves vulnerable in the relationship. The confidence dimension will often be ethically crucial when it comes to the balance of power both in formal and informal organizations and in individual counselling situations.

Of course, Løgstrup is not blind to the ethical challenges that a limitless confidence can implicate, and he operates with the term "Uunnværlighedsprøve" which could be translated into "a test of indispensability" for example by trying to imagine a life based on total trust in all relationships or the opposite: a life based on only distrust in all relationships. As other spontaneous expressions of life Løgstrup mentions forgiveness, mercy, compassion, hope and openness. He defined expressions of life as a set of basic positive values of human relationships.

This leads to another central concept in Løgstrup: "interdependens", i.e. a mutual dependence on each other as partners in all forms of coexistence. All relationships and all interactions are characterized by the fact that we are interdependent and mutually influence each other's possibilities. For others to get a good life and a meaningful existence, they depend on me, and I am as dependent on the others for my own sake.

Løgstrup is also regarded as a key contributor to the thinking on "proximity in ethics", and this is partly reflected in his thinking about the claims that can arise in meetings with other individuals. When "the other" decides to come to meet me, it's an expression of confidence and thus a silent demand or expectation on me to take into account the interests of "the other". It is an ethical claim not based on rules and principles, but a given theme and direction from "the other". The claim is often unconscious or diffuse, but the essence is to take care of the lives of each other. (Løgstrup,1956).

These kinds of claims arising when we meet people face to face will never disappear, they will always be present in the meeting, but we always have options about how we react. In our response, we can promote other people's lives and opportunities, but also destroy and prevent the other's possibilities in life. Løgstrup says that in the face of the other is always a claim, and the meeting can never be said to be characterized by neutrality. In the meeting we disclose ourselves, and this gives the other influence and to some degree power over us. When responding to a claim, we act ethically, Løgstrup says, and we should seek to find how we can take care of the lives of others in the meetings that take place (Løgstrup 1956).

Løgstrup is also concerned about the risks that occur in such meetings, and hence he emphasises compassion and restraint as important dimensions. Restraint is used here in the sense of care and caution and not in the sense that we do not care. This means that there is something in any relationship that should be withheld and therefore require restraint. All I can understand about experiences with other people is limited by the framework on which I base my understanding, including the experience, skills and values I have. This is why I should be reluctant not to commit abuse of power. Løgstrup says, "If we take power over another human being by defining it or make it a means to achieve our own goals, we have committed an abuse." (Løgstrup, 1996). Such abuses always imply that the other person is made smaller and un-free, and here Løgstrup's concept of claims in the meeting is highly relevant - to take care of the other in relation to me. A person's identity is over time changed and developed because none of us lives in total isolation. But we cannot control the identity of other persons unless we at the same time deprive them of control over their own lives. There will be a reduction of the other, says Løgstrup. He also operates with the term "zone of untouchability" in the sense of areas of other person's life that you have no right to penetrate, such as conditions in relationships that the other does not want to share with you.

Emmanuel Lévinas (1906-1995)

Emmanuel Lévinas was a philosopher and Talmud interpreter, born in Lithuania of Jewish parents but became a French citizen in 1930. He studied in Strasbourg, Freiburg and Paris, where he had the philosopher Martin Heidegger as a teacher. Lévinas was appointed professor of the University of Poitiers in 1964 and came to the Sorbonne in 1973.

His work at Poitiers was focused on phenomenology and could be seen as an extension of the thinking of his teachers in Freiburg. During those years he presented works which had many common perspectives with Løgstrup, and Lévinas. As well as Løgstrup, he is also regarded as a significant contributor to the "proximity in ethics". In Lévinas' works the persons we meet are referred to as "the other", and are primarily represented by their face. At a meeting between us and "the other" we are accountable, and the eyes of "the other" challenge us through their appeal and they can never be neutral (Lévinas, 1998).

Levinas' claims that we can never fully understand the other's inner life, or adapt this into our own thinking and standards. Berger Hareide expresses it this way: "Evil is for Levinas to ignore the appeal of the other's face, and seek influence in a way that becomes destructive or negative for the other. While the opposite, the good, is about seeing the other and recognizing the appeal of the other's face and acting accordingly. "(Hareide, 1997 p.29 – Authors translation) Levinas basic thinking is that ethics are always exercised when meeting with "the other" and the participants in such a meeting will always have a responsibility to act ethically.

Ethical Aspects Related to the use of ICT

The development of ICT (Information and Communication Technology) during recent decades has brought major changes to most workplaces, in education as well as in society in general. In this context, we will look at areas where increasing use of ICT introduces new ethical challenges.

Since ICT in itself is an industry-independent technology, many of the ethical aspects that require attention will be general in nature and recognized in most workplaces and educational situations. In this article we primarily focus on matters that are relevant to education and counselling situations.

Most people who work in educational institutions experience that ICT on the one hand reveals new opportunities and possibilities, and on the other hand contributes to an increasingly complex and rapidly changing world. Thus the picture clearly includes new opportunities but also new challenges. We can say that the challenges mainly relate to three different aspects:

- Privacy and personal integrity
- Protection of sources and copyright
- Data collection, storage, transparency and cross-coupling

In the education sector staff are usually well used to meeting the challenges related to privacy, integrity and protection of sources since they relatively often deal with these kinds of matter, e.g. in relation to confidentiality. It should therefore be assumed that this group of workers have a relatively high awareness of ethical considerations in this area.

Some of the new challenges that emerge more clearly in relation to ICT will be related to what personal data the employer, or not to mention scientists, want to collect and store electronically. Conflicts may occur between this and what personal information each individual wants to give up and authorization of how the data can be used, stored and distributed. During years at, for example, an educational institution, significant amounts of data may be gathered concerning an individual in different databases, registries and informal surveys. With today's technology it is easy to cross-connect these data and hence be able to select "interesting finds". The ethical dimension occurs already in the collection of the data since at that stage it should be made clear to the informants how the actual data will be stored, who is given access to them and particularly in which contexts the information can be used. In addition, anyone who is authorized to access the data will be responsible for an independent ethical assessment of what are legitimate and ethically justifiable intentions and goals for the use of the information.

In a counselling context, the ethical reflections especially around privacy and the protection of sources will be further challenged by the new communication opportunities in the ICT-world. It has always been considered good professional practice to determine in advance what kind of contractual and ethical guidelines exist between the counsellor and the client. In particular this applies to confidentiality and taking care of an individual's personal integrity and interests. Social media highlight this further because the consequences of unauthorized use of information can be of a different dimension and have more dramatic consequences than previously. It shows how the social contract between the parties is further important.

As a hypothetical example, we can imagine a situation where a teacher guides a student and this student immediately after the counselling publishes parts of the conversation on Facebook or by SMS to their network. In some situations, this may be quite unproblematic, but it is easy to imagine situations where this would be very unfortunate. In certain cases it may as well be violating principles of confidentiality and personal integrity and could easily affect third parties in a harmful way. Without any contract between the parties it will hardly be considered illegal unless it is of such nature that it may be a violation of defamation law, etc. In such situations ethical norms and guidelines would be of great help, but in general it can be said that not many educational institutions have focused on such challenges, and even fewer assimilate new ethical challenges related to the use of ICT.

In the article "Social media and Facebook - An ethical dilemma for the teacher" (Authors translation from original title in Norwegian: Sosiale medium og Facebook – Eit etisk dilemma for læraren. Bedre Skole, nr. 1, 2012) Bjørkelo), Alma and Helleve discuss interesting aspects concerning teacher-student communication via social media and conclude, among other things: "As of today, there exists very little guideline for how teachers should use this 'extended classroom'."

Electronic communication also introduces another ethical challenge since the individuals who send the messages do not necessarily either see or know the recipient (s). We recognize this as a general problem caused by the fact that many often become more direct and challenging in their statements by electronic communication precisely because of the fact that the sender does not need to relate to the reactions of the addressee, facial expressions, other body language or objections in the same way as if you meet face to face. The phenomenon is also well known in cases where utterances develop into such a nature that they can be categorized as harassment or bullying. This aspect is however beyond the scope of this article.

In some arenas this has also been practised, while many counsellors and coaches will reject this, based on the ethical and communicative challenges that may arise. It is natural to refer to an earlier section (3.1) which concerns Buber's aspects on how dialogue, relationships and the meeting between individuals are crucial. He will, as mentioned earlier, say that a genuine meeting between people requires an "I-Thou" relationship where the two individuals can make free choices independently of the other, and the meeting is therefore a risky venture because they invest themselves in this meeting. The relationship is something new as which cannot be generated unless both are participating. A meeting can touch us in our innermost, it can cause changes that leave a lasting impression and therefore the reciprocity that occurs in the meeting can be of such a nature that the participants see new possibilities and qualities in each other.

Another theorist who also underlines the importance of direct and simultaneous observation, interpretation and response in meetings between individuals is Løgstrup (see section 3.3). In connection with counselling and coaching situations, his term "sovereign expressions of life" concerns an important dimension, not least because these expressions are triggered just precisely in the meeting where the participants respond to each other. Likewise, his thinking about "confidence" and "interdependens" are important aspects. Furthermore, his contribution to the "proximity in ethics" is also worth taking into consideration, particularly the essence that the demand is to take care of the lives of each other.

Most likely neither Buber nor Løgstrup was particularly concerned about what future ethical challenges ICT could introduce. But it is interesting to note how the major lines in their thinking about ethics are still relevant in a totally new field. In many ways these aspects could be even more important in the new world of high-speed communication than ever before. In relation to ethical challenges regarding privacy, Løgstrup highlights an important dimension with his focus on "compassion" and "restraint". As previously emphasized the term "restraint" is used in the sense of care and caution and not in the sense that we do not care or don't want to get involved. Levinas (see section 3.4) also adds significant dimensions to the discussion of the importance of direct contact through

physical presence in the counselling situation and what may be lost by not having this kind of face to face contact.

Asymmetry Challenges

In the education sector, and for that matter in most professions and organizations, counselling situations will often be characterized by asymmetry. The term “asymmetry” here refers to unequal distribution of, among other things, formal power, informal power, knowledge and the authority to authorize definitions. Anyone who by virtue of their position or role within an organization obtains authority or power of any kind must always have an ethical awareness in relation to the temptation and opportunity to misuse this. This applies regardless of whether it is at work, in clubs and associations, in the family or other organizations.

It is easy to see that this will be present in the relationship between the staff and the students in the school or the children in a kindergarten, and that many ethical dilemmas and challenges related to how this asymmetry is used or misused can easily occur. In a counselling context it will be equally relevant to be aware of possible asymmetries between the counsellor and the client even when this could be two adults. The requirement of ethical consciousness arises in particular when there is an organizational hierarchical relationship between the two. The superior may often make or be involved in very important decisions about the subordinate employee concerning work tasks, salaries, rotas, promotion etc.

Both parties will face significant ethical challenges in such a situation. The subordinate may be tempted to act opportunistically and to a greater degree than she or he really means agree with or support the superior. There are also examples of counselling where subordinates give confidential information about other people or other people's relationships within the organization, all in order to stand in a better light to gain advantage in the superior's future decisions.

On the other hand, the superiors may find themselves tempted to use allusions to similar decisions to influence the subordinates and thus control the lives of others in an improper manner. For the superior there is also required ethical awareness of the exercise of power given by the position itself. Referring to Løgstrup, we can say that if the counselling situation is utilized improperly by either party, they do not take care of each other's lives so that the challenges and opportunities that arise in the meeting are not met on an ethically proper manner.

However it is in the nature of things that the superior, or manager, is expected to exercise power. It is one of the fundamental functions of management to exercise the employer's right to manage. On the other hand, it is a duty for all superiors and managers to utilise moral and ethical consciousness in a way that power is exercised with wisdom and

prudence that promote organizational goals, facilitate good interaction and simultaneously stimulates the employees and the workplace in a positive way. In many ways, we can say that this is much of the essence of practical professional ethics for managers.

In intensive counselling sessions, we often find asymmetry of different kinds so distracting that it can be very challenging and sometimes even impossible to obtain the necessary confidence and trust. If it is felt as such by any of the participants, it will be clearly unethical to force through a counselling process. It should be an ethical responsibility of both parties to clarify this in advance. If it seems impossible to establish the necessary level of confidence and openness, a solution may be to bring in an outsider who will not be subject to the same types of challenges in terms of asymmetry. However, it is important to remember when involving an outsider, often perhaps a professional counsellor or coach, that a high level of ethical awareness is still needed when it comes to asymmetry challenges. When introducing an outsider such challenges probably most often are connected with their level of knowledge, experience or authority to settle definitions.

Many employees in educational institutions have experienced ethical dilemmas relating to confidentiality, responsibility to notify and loyalty. In the education sector the loyalty extends in many different directions, e.g. in relation to parents, students, children, colleagues, managers, employers and public authorities. In recent years the focus on these aspects, and in particular notification cases, has motivated many professions to develop their own guidelines and standards of professional ethics. This work has largely been carried out by industry associations and trade unions, but also internally in larger organizations and companies. This is important and useful work and a good way to provide support and guidance in practical professional ethical thinking and action. Preparing and discussing such norms and guidelines will definitely be worthwhile and could simultaneously strengthen ethical consciousness and awareness. However, as both Løgstrup and Levinas points out, each individual will still always have a personal responsibility to act ethically.

Professional ethics for the teaching profession

We are one profession of teachers and leaders in early childhood education and in primary and secondary schools. Our political mandate is to promote learning, development and bildung for all children and pupils. Our values, attitudes and actions influence the impact of our work. These ethical principles constitute a common ground for the development of our ethical awareness. It is our responsibility to act in accordance with these values and principles.

Basic values of the teaching profession

Human values and human rights

Our work is founded on values and principles set down in universal human rights, especially the UN convention on the rights of children. These rights must be promoted and defended in early childhood education and in schools. The inviolability of human individual freedom and the need for safety and care are fundamental.

Professional integrity

Ethical consciousness and high professional competence are the basis of the profession's integrity and are essential in creating good conditions for play, learning and bildung. Our right to methodological freedom and our professional discretion gives us a special responsibility to be open about our academic and pedagogical choices. Society should be confident that we use our professional autonomy both properly and ethically.

Respect and equality

Each individual person's personality and integrity must be met with respect. No form of oppression, indoctrination or prejudiced opinions shall be tolerated. All children in early childhood education and all pupils in schools have a right to participate and have their views heard and taken into account. They shall have a right to freedom within the framework of the education community.

Privacy

Adherence to confidentiality and information standards is crucial in our work. Everyone has a right to privacy. Personal information must be managed in ways that protect the integrity and dignity of children, pupils, parents and colleagues. Electronic information dissemination requires a special critical awareness.

Ethical responsibility of the teaching profession

– in our work with children, pupils and parents

Our responsibility is to build a trusting relationship with those we work for and with. Our loyalty rests with the children and the pupils, to promote what is in their best interest. Truthful communication of knowledge and high quality pedagogical facilitation is essential.

All teachers and leaders of pedagogical institutions:

- promote the possibility to play, learning and *bildung* for all children and pupils
- work to be up to date academically and pedagogically
- are caring and are aware of the power we have by virtue of our position
- are academically sound and ethically aware in evaluation work
- promote equality
- meet children, pupils and parents with respect
- intervene and protect children and pupils against violations, regardless of who the violator is
- meet criticism with openness and well founded professional arguments

– in the work place

We are knowledgeable, responsible and present grown-ups in children's and pupils' lives. As a professional community we have a common responsibility to develop good education and to promote and develop our professionalism.

The professional community:

- initiates ethical reflection and dialogue with all employees at the work place
- cooperates to further develop knowledge, competences and ethical judgment, both internally and in interaction with relevant institutions in higher education and research

- creates and participates in a culture of positive cooperation where all opinions are treated seriously
- is loyal to the goals and regulations governing their institution as long as these are in line with the political mandate and our professional ethics
- works in a culture of openness and facilitates transparency
- respects the competence of other professions and acknowledge the limits of one's own disciplinary
- supports and takes responsibility when colleagues meet special challenges in their work
- takes responsibility to find good solutions, and, if necessary highlights unacceptable conditions when they are discovered in the work place

– for early childhood education and schools as public institutions

We are committed to the values of early childhood institutions and schools as these are set down in regulations decided by legal democratic institutions. The individual teacher and leader share the profession's responsibility to advance the purposes and goals of education.

The profession:

- shows courage and defends our political mandate
- use the freedom of speech actively and participates in relevant academic discussions and in policy debates on education
- take responsibility to warn authorities and the public when poor framework causes unacceptable conditions for children and pupils
- strive for good cooperation, but not by taking over responsibilities that are part of other professions' expertise
- do not compromise the values of the political mandate, our professional knowledge or our ethical values

Teachers and leaders in education are committed to the professional ethics and can never shirk their professional responsibilities.

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Diagnostic Competence of a Teacher as a Part of Professional Standard

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Abstract: Teacher's personality is one of the most important factors influencing the quality of education. The professional standards are then formulated based on the characteristics of the teachers' key competences, in order to serve as the quality standards of the teaching profession. One of the areas of teachers' competences, that is represented in the draft of the professional standards across several countries, is also the competence focused on examining and understanding students and their socio-cultural environment. In her study, the authoress points out the importance of teachers' diagnostic competences and their occurrence in the professional standards in several countries and in the Slovak Republic. She presents a draft of teacher's competency profile in the Slovak Republic. She presents the results of research investigations aimed at capturing the diagnostic competence of a teacher. In the conclusion of the study, she presents partial results of a profессиographic research related to the teachers' professional activities connected with examining and understanding the pupil and the school classroom. This text was created under the project VEGA No. 1/0802/11 titled "Creation and Verification of Screening and Diagnostic Tools for Primary Teachers" and is linked up with a project under the APVV supported by the Slovak Research and Development Agency under the contract No. APVV-0026-07 titled "*The Profession of Preprimary Teacher and Primary Teacher within a Dynamic Concept*".

Key words: teacher profession, professional standards, profессиographic research

Introduction

The personality of a teacher represents one of the most significant factors influencing the quality of learning. A teacher is perceived as a key factor in the process of learning. Spilková (2010, p. 21) states, that an improvement of the teachers' qualities as well as that of the quality of the system of their training and further professional development is nowadays widely considered to be the key tool of educational reforms and innovations in the way schools work. The effort to identify the teacher quality is reflected in the aim of the Comenius project "Identifying Teacher Quality", the goal of which was *to support teachers in Europe to strengthen their professional quality through the development of a toolbox with tools that enables teachers (and other stakeholders) to recognize, reflect upon and to evaluate teacher quality.*

One of the reflective tools is aimed at an analysis and reflection of formal documents regarding the teacher quality. For purposes of reflection of legislative documents the international and shortened versions of national documents from selected countries have been published on the website of the project

(http://www.teacherqualitytoolbox.eu/teacher_quality_in_europe). Based on the analysis of published materials and a multitude of professional and scientific papers and studies (Sachs, 2003, Biesta, 2009, Spilková, 2008, Kosova, Kasacova, 2006, Hargraeves, 2000, we can assert, that the improvement of the teacher quality remains at the forefront of the interest of both the professional public and the legislative processes. An effort to guarantee the "teacher quality" has led to tendencies of specifying the primary competences of a teacher and the standards for the teacher's profession. In individual countries, the standards are gradually becoming the starting point for learning of teachers and for their further professional development and evaluation. (Spilkova, 2008)

One of the areas of competences and requirements defined in the professional standards of teachers which is represented within the proposals of professional standards in a number of countries is the competence aimed at getting to know the learner and his/her sociocultural environment. From our point of view we speak of diagnostic competence and we analyze it further and study its occurrences within the competence profiles and professional standards of selected countries.

Diagnostic Competence as a Part of the Professional Standard of a Teacher

Spilkova (2010, p. 21) states, that an improvement of the teachers' qualities as well as that of the quality of the system of their training and further professional development is nowadays widely considered to be the key tool of educational reforms and innovations in the way schools work. The improvement of the quality of learning and of the vocational training is also related to diagnostics employed in the course of the process of education. Within the study plans we can find courses dealing with multicultural education, special pedagogy and inclusive learning, sociology of education and several others. The inclusion of these disciplines in the training process of teachers represents a prerequisite for an efficient education in a multicultural society and among children with special learning needs. Thus, an in-depth knowledge acquired by study forms the foundation for diagnosing in the profession of a teacher. Nowadays, the attention to getting to know the learner is also the subject of focus in the competence profiles and professional standards of teachers in a number of countries. However, it is not always explicitly referred to as diagnostic competence. The requirements imposed on the teacher in these documents do, however, include an implicit diagnostic competence. The authors (M. A. Flores et al, 2008) of the comparative study *Teacher quality in Europe: comparing formal descriptions* have pointed out the fact, that the requirements imposed on the teacher quality found in formal European as well as national documents differ significantly and are in no way homogeneous. The study, comparing 4 European documents and 9 national documents, shows that such a common language does not exist. That is one of the reasons why diagnostic competence is not always explicitly stated in these documents, although it forms an inseparable part of the requirements in the professional standards of a number of countries. We perceive it to be one of the most important competences of a teacher in the modern society as well as a key to achieving educational reforms (Cabanova 2010; Kasacova, Cabanova, 2011, Solomon, Morocco 1999). Relying on diagnostic competence, the teachers should be able to successfully face the challenges of teaching not only nowadays, but also in the future. (Sabo, 2010, Barth 2010)

Diagnostic competence is included in the documents of a number of countries. It is explicitly stated in the proposal of the competence profile of a teacher in the Czech Republic as the Competence in diagnostics and evaluation. In the proposal of a standard of a teacher, the diagnostic competence is represented by requirements such as: the teacher individualizes the process of teaching in accordance with the abilities of the learners, he/she is able to identify learners with specific learning and personality disorders, he/she can optimize the choice of the curricula and teaching methods according to the abilities of the learners, he/she is able to identify sociopathological phenomena in learners, bullying, harassment, and is aware of the possibilities of treatment and prevention thereof, etc. However, in the national documents of a number of countries the diagnostic competence is stated mainly implicitly and is not named directly. It is often represented mainly by a formulation of the competences of a teacher within the professional standards, which the teacher should be able to demonstrate regularly in the course of his professional career. It is due to this fact that we will attempt to further identify the diagnostic competence found in the available national documents.

One of a number of examples is the document effective in Great Britain. ***The UK teacher competences and requirements*** (see The UK teacher competences and requirements) contain three broad fields of key competences, namely: professional values and practice, knowledge and understanding, and teaching. In each and every of these, we have identified the requirements for the competences of a teacher, which are impossible to meet without the teacher possessing diagnostic competence, and for that reason the diagnostic competence is implicitly indicated by these requirements. In the area focused on the *professional values and practice* it is expected of the teachers to be able to improve their own teaching, by evaluating it, learning from the effective practice of others and from evidence. Such a requirement is tied especially to the self-diagnosis of a teacher and his own work. Diagnostic competence is represented to a much larger extent in the requirements *Knowledge and Understanding*. This part of the standard assumes, that the teachers will have a clear notion of how the learners will advance and what they should achieve in the process of teaching. Within the standard, this fact is represented mainly by the requirement that they understand how pupils' learning can be affected by their physical, intellectual, linguistic, social, cultural and emotional development, they understand their responsibilities under the Special Educational Needs *Code of practice*, and know how to seek advice from specialists on less common types of special educational needs, they know a range of strategies to promote good behaviour and establish a purposeful learning environment. However, diagnostic competence is represented mainly by the requirements in the area of *teaching, namely*: They make appropriate use of a range of monitoring and assessment strategies to evaluate pupils' progress towards planned learning objectives, and use this information to improve their own planning and teaching, they monitor and assess as they teach, giving immediate and constructive feedback to support pupils as they learn, and many other requirements.

Diagnostic competence is indispensable in order to meet the aforesaid requirements. An adequate pedagogic intervention is not possible without knowledge of the actual state. **The ESTONIAN teacher competences and requirements** (see Miniversion Teacher Quality in Estonia) are also formulated in three basic areas, but the presence of diagnostic competence within them is also stated only implicitly. We can identify the diagnostic competence mainly in the part Professional skills of a teacher, namely: *prepares development plans for learners; if necessary, prepares individual learning plans, observes the work of learning groups and responds in a flexible way, prevents and solves discipline problems, notices individual features, learning difficulties and problems arising from the personality of learners and responds appropriately; supports the development of learners' personality, creativity, knowledge and skills, etc.* It is obvious, that the national documents in Estonia do not mention diagnostic competence directly as well. However, such competence arises directly from the requirements imposed on a teacher. Analogically, the diagnostic competence is present by means of requirements in the documents of Netherlands (**The Dutch teacher competences and requirements**, see Competence requirements teachers).

Primary teacher should meet a number of requirements related to his/her diagnostic competence, such as: *He/she is well informed about communication processes, manners and conventions in the students' social environment, He/she forms a picture of the social atmosphere in a group, of the children's individual well being, and of their progress with respect to independence and responsibility, On the basis of these observations he/she works out a plan or an approach to guide the children towards a safe and harmonious living- and working climate, as well as to stimulate their socio-emotional and moral development, etc.* In the proposal of a **competence profile of a teacher in Slovenia (The case of »teacher quality« in Slovenia)**, (see Marentič Požarnik, 2006), where it is represented by requirements such as: *develops students' social skills, understands and uses basic principles and steps of counselling conversation and work with students, creates an encouraging learning environment in which diversity is valued and each learner feels accepted, safe and self-confident, uses appropriate strategies for coping with inappropriate behaviour, aggression and conflicts, takes into consideration students' developmental characteristics and principles and successful learning in planning and executing teaching, etc.* In Slovakia, the fundamental requirements imposed on a teacher are part of the proposal of a teachers' competence profile and professional standard.

Diagnostic Competence as a Part of the Legislative and Curricular Documents in Slovakia

In addition to being emphasized by modern pedeutology, diagnosing and diagnostic competence of a teacher is also included in the legislative documents in Slovakia. The national program of education for level 1 of primary education which forms the basic

legislative pillar for primary teachers and represents the "hierarchically highest goal-oriented program-based project of education" (ISCED 1: p. 1) sets down the notion of diagnostic competence within its very first part. Herein it is stated that "a timely correction of potential disadvantages (medical, social and educational) and the identification and addressing of specific needs, interests and abilities (including capabilities and talents) of the learners forms an integral part of the target program". It is important to address learners with special educational and learning needs (progression: an early identification of problem areas, diagnostics and a subsequent reeducation or correction of potential disadvantages). The need for diagnosing is also included in the Act Nr. 317/2009 Coll. on pedagogical employees and professional employees and on amendments to certain acts in § 5, Rights and responsibilities of pedagogical employees and professional employees, article 1, sections d) and e). They describe an activity oriented towards "presenting propositions aimed at improving the quality of education and learning, school-based learning program, program of education or professional activities" and the "selection and application of pedagogical and professional methods, forms and means, which create the conditions for learning and self-development in children, learners or students, and the development of their competences." The only way a teacher can bring the aforesaid requirements of the process of education into fruition is by means of a diagnostic activity.

Diagnostic Competence as a Part of the Competence Profile and of the Professional Standard of Primary Teachers in Slovakia

The proposal of a competence profile of a pedagogical employee identifies the diagnostic competence as being explicitly stated in the individual competences included in the dimension of a learner and in its three primary spheres, especially by means of the requirements regarding the competences of a teacher: to identify the developmental and individual characteristics of a learner, to identify the psychological and social factors of his/her learning as well as the sociocultural context of a learners' development. Implicitly contained is the diagnostic competence, which the teacher has to demonstrate also within the framework of competences defined in the dimension of the process of education, if he/she wants to carry it out effectively, which can only be achieved on the basis of knowing - diagnosing his/her learners. This stems from competences related to the management of the process of education, such as: the ability to specify the learner-oriented goals of the learning process, the ability to select and bring into fruition the forms and methods of learning, the ability to evaluate the course and the results of the process of teaching and learning ability of the learner. Self-development of a teacher is also represented in competence. Based on the formulated requirements, a teacher should be able to perform a self-diagnosis of his/her activities and plan his/her further professional development. Diagnostic competence is an inseparable part of all three broadly defined competences. Within them, the contentual and qualitative requirements imposed on the diagnostic competence of a teacher (knowledge, skills, attitudes) are being raised ever

higher depending on the career stage, starting with the position of a beginning primary teacher, independent primary teacher, by raising the qualification requirements on the position of a primary teacher on all career stages according to Act Nr. 317/2009 Coll. Implicitly included is the diagnostic competence, which the teacher has to demonstrate also within the framework of competences defined in the dimension of the process of education, if he/she wants to carry it out effectively, which can only be achieved on the basis of knowing - diagnosing his/her learners. The above stems from competences related to the management of the process of education: the ability to specify the learner-oriented goals of the learning process, the ability to select and bring into fruition the forms and methods of learning, the ability to evaluate the course and the results of the process of teaching and learning ability of the learner.

In addition to the competence profile of the pedagogical and professional employees, a *professional standard* was proposed, in which the three broadly defined primary competences (learner-oriented competences, competences oriented on the process of education and competences oriented on self-development) are elaborated directly into the competences of a pedagogical or professional employee. For every career stage, the professional standard contains the specifications of competences, which are based on the proposal of the competence profile of a teacher in the Slovak Republic. (see Kasáčová, B., Kosová, B., 2006) Based on the proposal of the competence profile, the professional standards for individual categories of pedagogical and professional employees in the individual career stages and positions were specified and proposed and subsequently published as annexes in volumes 2/2008 - 4/2009 of the periodical *Pedagogické rozhľady*, and thus were subjected to public debate. However, after adopting the Act Nr. 317/2009 Coll. on pedagogical and professional employees the standards did not come into effect and they are currently being worked on again.

Diagnostic Competence as a Part of the Professional Activities of a Teacher

As part of the realization of the project APVV-0026-07 we have carried out a professiographic research aimed at exploring and mapping of professional activities of pre-primary and primary teachers in Slovakia, Czech Republic and Poland. One of the aims of the research was to identify and characterize specific activities of a primary teacher. The research was carried out in Slovakia, Czech Republic and Poland. In this study we present partial results of the research and focus solely on the analysis of those professional activities of primary teachers in Slovakia which are related to diagnosing and evaluating a learner. For more information on the research, its execution and partial results, see Babiaková (2009, 2010), Kasáčová (2009).

Characterization of the research tool and the course of the research

The profession of a teacher has been the subject of many research projects, both in Slovakia and abroad. Based on a more detailed analysis of predominantly professiographic research ventures concluded until the present and elaborated in great detail by Seberová, A. (2009), Lukášová, H. (2009) in Czech Republic, by Tabačáková, P., Babiaková, S. (2009) in Slovakia and by Hanes, D. (2009) in Anglo-Saxon countries, as well as on the knowledge of contemporary conditions of the situation of education in the Slovak Republic, we have created research tools under the project APVV-0026-07, which we will characterize in brief. The primary method of the research was the ***method of a daily screening for the temporal analysis of work activity***, which is aimed at self-observation connected with the continuous and retrospective recording of the temporal duration of work activities of the given profession during and after the working hours.

Specialized literature did not offer a valid and adequate tool for making screenings of the professional activities of primary teachers, we have therefore started to develop a research tool of our own. In the beginning, tangible professional activities observable in pedagogical practices were specified according to the competence profiles of performance standards. The sheet for professiography of a primary teacher represents the pivotal component of the research tool system. The research tool (the sheet for professiography) contains 27 professional activities which are subject to research. The activities a1 - a25 are dubbed standard professional activities and in regard to these, the respondents only had to give an exact estimate of temporal duration. The activities aE and aF are dubbed non-standard professional activities. For these categories, the respondents named, or described, the activity performed in a given category exactly and gave an estimate of its temporal duration. By giving the respondents the possibility to express themselves freely in the activities aE and aF we gave them room to name the activity which they really consider to be professional and which they were missing in the sheet for professiography.

Primary teachers were using the self-diagnostic research tool for screening of the professional activities of a primary teacher on a daily basis for a total of two weeks, which is equivalent to 14 calendar days. They recorded the temporal duration of the individual work activities carried out between 7:00 and 16:00 o'clock into the research tool. The research by means of the aforesaid research tool consisted of three two-week stages, which we carried out throughout May 2008, October 2009 and February 2010. The duration of each stage was two weeks and the aim and goal was to record professional activities of primary teachers in every stage over the course of two common weeks of a school year. For that reason the collection of research data did not take place during periods of time other than common weeks of the year, e.g. during school holidays or public holidays.

Research sample

Respondents from three countries participated in the research. With regard to the aims of this study, we only present the numbers of respondents from Slovakia. The research was joined by a total of 224 primary teachers from Slovakia. The highest percentage consisted of teachers with an experience of <10, 20) years, teachers with an experience of <21, 30) years and 14 teachers did not specify the length of their experience. As the specialized literature considers a teacher with an experience of 13 - 20 years to be accomplished or established (*established teacher*) and a teacher with an experience of more than 21 years to be experienced or "expert" (*expert teacher*) (according to Kasáčová, Tabačáková, 2010), we can assert, that the majority of participants in our research sample consisted of experienced teachers.

Interpretations of the selected results of the research

After the extraction of research data, all 27 of the recorded professional activities included in the sheet for professiography (more on the sheet and the entire research in Kasáčová, Babiaková, Cabanová et al. 2011) were subdivided in relation to the proposed professional standard of a primary teacher into three basic dimensions, namely: dimension of the process of education, dimension of the learner and dimension of the self-development of the teacher. (see Kasáčová, B., Kosová, B. , 2006). The sheet for professiography also included four activities the performing of which in the process of practical education is related to diagnosing and mentoring of a learner, namely: preparation and realization of an individual plan of education and learning (a8), activities related to diagnosing (a12), meetings and cooperation with parents (a13) as well as consultations with teachers and (a15) other experts regarding the learners and pedagogical activity, the realization of which as a part of a teachers profession is directly related to legislative regulations and to the process of education of learners with special educational and learning needs. According to Babiaková (2009), Kasáčová, Tabačáková (2010), all of these four professional activities are learner-oriented and are closely related to his/her diagnosing. All of the activities represented in the dimension of the learner accounted for 16.1% of the total time spent by the teachers performing all of the professional activities in the course of a working week.

From among the observed aforementioned professional activities included in the dimension of a learner most teachers were engaged in consultations with teachers and other professionals regarding the learners and pedagogical activities. Meetings and cooperation with parents can also be considered a standard professional activity. During the observed time period a total of 199 primary teachers (88.8%) declared to have engaged in this activity. *The preparation and realization of an individual plan of education and learning (hereafter as IVP) for a learner with special educational and learning needs* is in the responsibility of the teacher and is anchored directly in the legislative documents. In the sheet for professiography, this is the only activity carried out only by those teachers,

whose class is attended by an individually integrated learner with special educational and learning needs.

During the working week, this activity was carried out by a total of 125 (55.8%) primary teachers mainly during their working hours and 16 (7.1%) of the teachers were engaged in this activity during the weekend as well. These teachers dedicated an average of 81.8 minutes to this activity during the working week and those, who were engaged in it even during the weekend, spent an average of 32.8 minutes on this activity. The time spent on this professional activity represents 2.7% of the total time spent by the primary teacher on professional activities in the course of the entire working week. More than a half of the respondents were engaged in the preparation and realization of the IVP. Thus, every single one of these teachers has a class with at least one learner, whom he/she has to dedicate extra time in the process of education. Unfortunately, we have to say that activities related to diagnosing have not yet become an inseparable part of the work of all the teachers. During the working week, this activity was carried out by a total of 162 (72.3%) out of 224 primary teachers. Based on this figure we can assert, that up to 62 teachers did not engage in these activities in the course of the research.

The teachers carried out activities related to diagnosing mainly during the working hours of a working week, however, some of them engaged in said activity even after the working hours. We find it surprising, that more than $\frac{1}{4}$ of all the respondents from the ranks of the teachers did not identify even one minute of their professional activities to be aimed at diagnosing of learners. It is especially surprising due to the fact, that the diagnosing of learners is anchored directly in the legislation, as well as in the proposal of professional standards of primary teachers. On the other hand, this result correlates to a certain extent with the findings of Babiaková (2010), whose research was also aimed at screening of the learning needs of teachers. According to her findings, up to 16.9% respondents declared, that they needed to develop exactly the competences aimed at diagnosing the individual characteristics of learners. Thus it is certainly possible, that the teachers do not engage in activities related to diagnosing and that they really lack the theoretical background in that area, which we, as educators, can provide by means of the appropriate programs of continuous learning and in such a way we can directly influence the performing of these activities in educational practices.

Conclusion

Rieser (2011) stated even in the title of one of his studies, that the only philosophy, or approach to education which has sense in this world is inclusive learning. If we agree, or if we as much as admit that this thesis may be true, we also have to accept the fact that such education is not possible without the diagnostic competence of a teacher. The trend of inclusive learning has been gradually and for a rather long time reflected in a number of

legislative documents in Slovakia. The importance of diagnosing is also stressed by the authors of the publication *Higher Education of Teachers: Development, Analysis, Perspectives* (Kosová, et al., 2012), who point out the importance of acquiring diagnostic competences of a teacher in the process of his/her undergraduate training. However, it must not remain solely a matter of undergraduate training. Diagnostic competences are also developed on the basis of professional activities carried out as part of the educational practices, on the basis of exchange of information among colleagues and an expert assistance from other involved parties as well as on the basis of the system of professional development, and not only in the area dedicated directly to diagnostics. In conclusion, we can only agree with Solomon and Morocco (1999), that a diagnostic teacher is such, who moves flexibly through the three diagnostic domains, constantly assessing student's needs, teaching goals and pedagogy, reassessing each domain in light of what is learned in the other two.

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Integrated Practice: A Time to Reflect on Creativity

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Abstract: The challenges that teachers face in a rapidly changing world are growing. To react to these challenges, teachers must consider how their professional development integrates knowledge about teaching practice. Borrowing a concept from the field of architecture may help educators to understand how professional practice is integrated. Integrated practice originated at The Bauhaus School in Germany. One of the main objectives of the Bauhaus movement was to unify art, craft and technology. Reflective practice in teacher education has attempted to address the craft of teaching and use critical analysis to develop professional practice in new and interesting ways. It is; perhaps, time to address the art of teaching-creativity. At the same time, it is incumbent upon educators to contextualise this art in the technological age in which it is emerging. This paper will evaluate the importance of an integrated approach and use a Japanese educational context as a case study.

Key Words-Creative Action, Integrated Practice, Critical Analysis

“Notwithstanding their origins, commonalities and differences, all systems of teacher preparation have to rethink their core assumptions and process in the new global context.”

(The International Alliance of Leading Education Institutes, 2007 cited in Kumaravivelu, 2012)

Introduction

The aim of this discussion is to put forward a model for teacher development that reflects on this global context, but also reminds educational practitioners of the importance of durable and consistent approaches to teacher education. It is desirable that through this discussion it will become clearer why this approach is valuable and why it should concern us all (practitioners of education). The emphasis is on critical analysis and creative action integrated into teaching practice. The discussion below will outline the important characteristics of such an approach. It is hoped, therefore, to contribute to a wider discussion about the need to recognise that practice and theory need to become a fluid concept of teaching practice. To contextualise the approach it is important to provide an overview of current policy that impacts upon teaching education in the Japanese (author's) educational context. This will include both macro and micro factors that are salient for this discussion. This particular discussion will focus on English language teacher education, as

it is familiar to the author, although the issues highlighted are of significance to the wider teaching profession.

Kumaravivelu (2012) recognises in trying develop a sophisticated framework about good teaching and the nature of teachers' learning we must understand issues about "Not only teacher's knowledge, skills, dispositions, cognition, and beliefs about teaching but also.....educational, social , cultural, ideological movements as well as political changes. To this long list add global economic trends and global cultural flows." This recognition speaks to changes that are developing in Japanese education, generally, and teacher education, specifically, as outlined in the next section of this paper.

Background

Global 30 in Japan

The Japanese Government initiative termed the "Global 30 Project for Establishing Core Universities for Internationalization" aims include recruiting an extra 300,000 international students by 2020 to study in Japan in English, as well as sending more Japanese students overseas, mainly to English speaking countries. This initiative raises questions related to teaching pedagogy and practice. Firstly, what kind of teaching methodology will be selected to develop these English-oriented programmes in Japan? A second related issue, how will teachers be supported in their professional development to deal with these challenges? These are not only salient questions for the Japanese context and the same questions could be considered equally valid for other countries undergoing educational change. To understand how policy shapes practice in Japan it is important to examine how external and internal factors influence educational initiatives, and by extension, teacher development.

Kokusaika (internationalisation) has become a term that is difficult to disentangle from a complex linguistic and educational reform agenda in Japan. Burgess et al (2010, p.463) point out that promoting Japan abroad is a possible interpretation of this concept of internationalisation. Further, they suggest that the conservative understanding of this term " is less about transcending cultural barriers and more about protecting them." This presents a problem when examining the macro policy agendas of institutions such as the Japanese Ministry of Education (MEXT). If promoting Japan abroad through educational exchanges is first and foremost a desire to protect national interests and identity, this certainly could impact upon teaching and how professional development is conceptualised and evaluated. The global context also has some influence over national policies.

Guroubaruka (globalisation) as a term has in some ways overtaken kokusaika in the discourse of Japan's relationships with external realities. Moreover, a noticeable difference in the understanding of these terms is that guroubaruka is considered as an

external and uncontrollable phenomenon. However, as recent developments in the Japanese commercial sector demonstrate, this shift in global attitudes or language is particularly relevant for analysis, and can have serious ramifications for educational policies and institutions. In the Japanese context, this global commercial imperative has influenced large Japanese corporations, such as Uniqlo and Rakuten, to demand increased workplace English usage (in Japan) and require higher English proficiency from its workforce. This is, perhaps, an indication of a change in attitudes to professional usage of English; however, it also highlights that the forces of globalisation can offer both 'opportunities and threats' for the global non-native speakers of English (Yamagami & Tollefson, 2011, p.22).

The economic realities are clear within this global discourse of business practice but linguistic capital is also valued in the academic and global English world (Block & Cameron, 2002). The term glocalisation has allowed for a more comprehensive understanding of how the local is connected to the global in a less asymmetrical relationship (Robertson, 1995). This term glocalisation, in terms of English usage in the Japanese context, seems at odds with approaches to language education in Japan that Kubota (2002, p.28) suggests represent an isosceles triangle. The forces of Anglicisation and nationalism are pulling in different ways from a more diverse understanding of the use of English and other languages, both within Japan, and between Japanese and other external actors. Both Anglicisation and nationalism are present in the conceptualisations of *kokusaika* and *guroubaruka*; however, diversity does not seem prevalent in the nationalism discreetly packaged in language policies.

McVeigh (2000) has identified Japanese nationalism as a manifestation of Japanese identity and divided it into three components: ethnocultural, statist and racial. Whilst ethnocultural is the strain of nationalism that most are familiar with, it is the statist nationalism that has most relevance to socioeducational contexts for the study of English language education (ELE) in Japan. This has resulted in a hardened ideology of Japaneseness that McVeigh claims "is sustained and reproduced by education" (ibid, p.78). At this stage of the discussion, it is important to note, as McVeigh does (ibid), that educational initiatives in Japan, it can be argued, are implemented to benefit the state and the economic imperatives outlined above, and not necessarily to benefit individual citizens. This has causal relationships for teacher education in Japan in a number of ways. Macro policy will dictate, to some extent, what kinds of teacher education are valued for recruitment purposes, and also what aspects of professional development are prioritised at this level.

Local educational context

The Language, Education and Research Centre (Author's research focus), which is a service centre for English language education at the University, has found itself at the forefront of some of the challenges outlined above. The Language Centre supports a

significant proportion of students that study abroad. A primary goal is to promote study abroad programmes and to provide a supportive study environment that is conducive to this goal. A Global 30 grant has enabled the institution to broaden and specialise course options and introduce state-of-the-art language learning facilities. An emphasis on the development of academic literacies, digital literacies, and inter-disciplinary literacies has been at the forefront of the changes that have taken place, promoting lifelong and sustainable learning that enables learners to be confident and competent to study abroad. Furthermore, it helps shape globally minded individuals that can interact in increasingly complex international contexts.

The challenges of both the macro and micro developments in the Japanese context speak to the uncertainties that global and glocal (isation) present for teaching practitioners. On the one hand, global developments are dictating policy and curricula decision-making. Conversely, in Japan, the government is also tending to react against global developments with a more statist rhetoric that contributes to mixed messages being communicated to the teaching profession. These developments reinforce the necessity to develop teacher education models, which provide a holistic and cooperative dimension, to support teachers in the challenges that they face. The discussion in the following section of this paper will outline how teaching education models have evolved over time and suggest a (re) conceptualisation that takes into account the challenges highlighted above.

Literature Review

Reflective practice

The value of reflective practice in teacher education has been gaining recognition over time. This has been in part due to the work of Donald Schon (1983), who looked at various professional contexts and problem solving. Schon, importantly, made the distinction between reflection-on-action (before or after teaching) and reflection-in-action (during teaching) (cited in Bailey & Springer, 2013). A seminal model of professional development was constructed by Wallace (1991); and this approach included the craft model, which placed a strong emphasis on trainee teachers working with a master practitioner. The second component was described as the applied science model. This related to the scientific aspects of teaching and was reinforced through interaction with experts through such forums as academic journals and conferences. The third part was related to reflective practice discussed in relation to the work of Donald Schon above. The purpose of this paper is to put forward a reconfigured model related to the Wallace model, and to suggest that the rapidly changing educational landscape discussed in Japan, and also very noticeable in other global contexts, requires a renewed attempt to understand professional development through a model that speaks to these changes.

In more recent developments in teacher education, it has become clearer why it is that a sociocultural perspective has a promising part to play in teacher education (Johnson,

2009). Self-reflection and group reflection both support the critical analysis that is a crucial dimension of professional development. However, an important part of teaching in the modern world is also linked to creativity and expertise of teachers in the classroom to react to the constant flux of policy and curricula changes. It would appear that the models of teacher education put forward thus far have not been placing enough emphasis on teachers' creative actions and the role of technology. Borrowing a term from the field of architecture may help educators to understand how professional practice is integrated in a number of ways. Integrated practice originated at The Bauhaus School in Germany and was founded on the idea of creating a total work of art, including architecture, which would eventually be brought together. One of the main objectives of the Bauhaus movement was to unify art, craft and technology. This challenge is what teacher-educators face in this rapidly changing educational environment of the 21st century. Reflective practice has attempted to address the craft of teaching and use critical analysis to develop professional practice in new and interesting ways. It is, perhaps, time to address the art of teaching-creativity. At the same time, it is incumbent upon educators to contextualise this art in the age in which it is emerging. Technology is the third component of integrated practice that requires a better understanding to develop these ideas more. This model referred to throughout the remainder of this paper will be the CAT model-Craft-Art-Technology. Much of what has been discussed above relates to the craft of teaching, and this is a fundamental cornerstone of professional development. The art of teaching in this approach recognises the importance of creativity in teaching. This concept of creativity is where the discussion will now turn.

Creativity: myths and challenges

Treffinger, Schoonover and Selby (2013), attempt to dispel some common myths about creativity. Principal among these myths is a common held belief that creativity is only a rare form of genius. Moreover, it is also relevant to highlight that in some respects creativity is viewed as a fun and, a not to be taken seriously, endeavour. In this context, creativity is often linked to arts and crafts, such a painting and pottery, for example. Perhaps, of most importance in dispelling myths about creativity, is a commonly held belief that there are no boundaries, and that all thinking must be 'outside of the box', and only certain individuals are predisposed to creative behaviour. These beliefs about creativity do not fit well with constraints on teaching practice and teaching contexts that require flexibility and pragmatism. There is, however, research about creativity in education that provides a better lens from which to understand these issues.

A number of studies in the 1990's and 2000's investigated student, teacher and parents' beliefs in relation to creativity in education. Craft (2003) made a distinction between 'everyday creativity' and 'extraordinary creativity'. For the purposes of this discussion, it is the everyday creativity that seems to contribute to the CAT model, which will be focused upon, because as already highlighted, extraordinary has connotations that are difficult to integrate with teaching realities. Craft (ibid, p.123) also discusses the challenges of

creativity in practice and professional artistry within a centralised pedagogy. “The centralising not only of the curriculum but also pedagogy may be seen as restricting potential teacher creativity. So, how does a teacher balance professional creativity and judgement against the requirements to teach in certain ways?” The question that Craft poses here goes to the heart of this topic and the polarisation of global educational debates. In a rapidly evolving educational landscape, there is also a characterisation towards sameness of educational systems and pedagogies. This requires a move towards identifying a collaborative model of teacher education that can withstand these polarising demands on teachers.

Hallowell (1993) suggests creative teaching depends on being able to identify needs clearly; being able to read a situation; preparedness to take risks and capability in monitoring and evaluating events. Furthermore, dynamic interactions and relationships were recognised by Craft (1998) as contributing and fostering creative action involving salient actors in the educational process. A framework for understanding creativity, and its value in the professional development of teachers, is by recognising the mutually supporting aspects of creativity and creative action. Examining technical and inventive conceptions of creativity offers an avenue to understand how creative action can flourish under particular educational considerations, such as time and teaching autonomy. Technical creativity utilises knowledge, skills and expertise. It also implements ideas, methods or techniques that are new to the individual but not new to others. On the other hand, inventive creativity consists of the use of existing ideas, materials, methods and techniques in new or unusual ways (Kampylis, Berki and Saariluoma, 2008). These technical and inventive conceptions of creativity fit with Hallowell’s creative teaching and Craft’s creative action approaches, and also offer a more realistic position from which to promote creativity in teacher education.

Understanding creativity and creative action

The debunking of myths highlighted above, and the acknowledgment of the challenges of positioning curricula and pedagogy within certain educational constraints, helps to clarify what creativity means within teaching contexts, and also begin to highlight the necessity to develop a supportive and collegiate atmosphere where creative action can be fostered. The following discussion will contextualise these issues with examples of workable approaches across different teaching contexts, anchored within an appropriate teaching philosophy. However, before turning to practical issues a word on technology.

Technology: tool or tutor

The importance of an understanding of the technology that affects education and educational practices at the local level should not be underestimated. It is becoming more

and more apparent that educators must develop skills that can utilise the latest technology and promote the interests of the web 2.0 generation. Indeed, in the Japanese context, there is a shift to hire more teaching faculty with a background in educational technology. Importantly, Holliday (1994) believes technology covers a broader range of methodologies, which contribute to classroom practice, and their realisation in textbooks and classroom material. This raises an important quandary for educationalists: is technology a tool or is technology the methodology? The question above does not quite capture the complexity of the debate and is an ongoing discussion that will continue to take place in educational institutions around the world. What's more, perhaps we require a better understanding of the conceptualisation of technology. However, it is certainly true that by creating time and space for creative action to take place that the pedagogical benefits and limitations of different technological interventions can be properly reflected upon. Why this time and space are important and how it can be realised will now be examined.

Japanese teacher collaboration

In the Japanese education system lesson study has been one salient approach adopted by teachers to work in collaboration. This can be summarised briefly as the bringing together of teachers to discuss a lesson they have first jointly planned in great detail and then observed in the classroom (Fernandez, 2002). This is an example of a collaborative approach to teaching and Fernandez believes "that what makes lesson study a truly powerful continuous improvement agent is that it is articulated within the Japanese educational landscape to allow for teachers to regularly learn from each other's lesson study experiences" (ibid, p.395). This approach is evident within elementary and secondary schooling in Japan; it has not found any traction within the tertiary sector. It also seems to find favour principally amongst Japanese educators. The examples and models for professional development and teacher education for native-speaking English teachers in Japan are less prevalent. The approach below will show how it is possible to connect these teaching contexts through better understanding of the characteristics of a salient collaborative teaching model. In order to do this, it is important to consider, first, the salient epistemology that influences the practice of the teacher educator model put forward in this paper.

Teacher expertise

Some discussions have suggested that teachers have increasingly recognised that validating their prior experiences, interpreting their classroom activities, and the context that shape their work has uncovered some of the complex nature of teaching (Johnson, 2006). As we develop as teachers we can begin to look more closely at our lessons and classroom interactions. It has been noted that this reflection on our experiences 'defies explanation' and is characterised by being able to make intuitive judgments on the basis of prior experiences (Tsui, 2003). It has been suggested that expertise is the critical

difference between an experienced teacher and a novice (ibid, 2003). Many teacher education and development models have recognised this; however, these approaches must do more to encourage colleagues with various training and experiences (distributed expertise) to support and collaborate with each other (Curry, 2008). Moreover, the implications of working in isolation are perhaps a fossilisation of teaching practice. The sharing of experiences from the classroom in a critical discourse offers a more reflective and emancipatory model of teacher education. The beliefs and identities that teaching practitioners hold can also reveal more about the experimental nature of teacher development.

A teaching philosophy

A conceptualisation of teaching is as important, if not more important, than technical aspects of teaching. Influential educationalist Freire believed in problem-posing education in which participants reflect on their education as a collective process; and can then become to perceive them as objective-problematic situations (1970). This supports collaborative and critical approaches to problems or issues that teachers want to examine. Furthermore, as an awareness of this has developed through the work of Donald Schon and has “been a rallying point for besieged liberal progressive educators” (Smyth, 1989, p.2). Schon’s work has indeed been instrumental in discussion of practitioner-derived knowledge (Smyth, 1987). This further indicates that teacher development is a rather complex process that is not formulated or finalised by technical or service training. A discussion of *praxis* as theorised practice is appropriate to the work of Schon and Freire in conceptualising an approach to teacher education.

Praxis is a fluid concept that furthers our understanding of teaching practice. Freire by using a banking metaphor exposed the difficulties a restrictive approach to our teaching philosophy can have. The teacher makes deposits and the students receive, memorise and repeat (1970). This static and unchanging hierarchy of knowledge does not take in to account the development of learning that is influenced by environments and interactions. Teachers or students, or in this discussion, teachers that are learning, do so in the classroom, which suggests that our understanding of this environment is crucial. As stated above, this is a conceptualisation of teaching that goes to the heart of progressive education. Furthermore, the critical dimension of this is marked by constraint. The constraint has been marked by the interaction or lack thereof, between teachers and teacher educators or researchers (Elbaz, 1988). The tension between practice and theory has been discussed and articulated over time (Edge & Richards, 1998). If this constraint is indeed based on different practical and theoretical positions and perceptions, it does seem that understanding our teaching practice and using our understanding to reflect on it, offers an alternative that fits with the teaching philosophy discussed.

The sociocultural dimension

The notion that human’s can develop as participants in cultural communities has been

discussed in the relation to the sociocultural turn and its relationship to human cognition. Johnson suggests, “participation and context are critical to human cognition” (2006, p.238). This paradigm also expresses that higher-level cognition is socially constructed. This has ramifications for the discourse of teacher development and is broadening sociocultural theory in to new areas. This has transformed our understanding of learning and teaching; the most salient aspect is the fluid interaction and reciprocal learning that takes place through dialogue.

Dialogic mediation

Dialogic mediation has been identified as the primary means by which learners are assisted and supported in their learning. Johnson explains this as “the character and quality of interaction between learners, teachers, and the objects in their learning environments (2009, p.4). This can be achieved through basic imitation and is discovery-based in its more complex forms. This theoretical understanding helps us to make sense of our experiences in the classroom, and reflect on them, with the intention to improve our practice. An important part of this process involves scaffold learning and assisted performance that can be facilitated through an expert collaborator or teacher.

Sociocultural learning

Vygotsky’s concept of the Zone of Proximal Development (ZPD) has been widely discussed (Lantolf and Thorne, 2006) and is considered a salient learning development paradigm. Johnson explains “ZPD is a metaphor for capturing an individuals potential abilities by observing and promoting his or her current performance through social interaction” (2009, p.99). It is often suggested that an expert can scaffold and model and through this interaction promote the learner’s capacity to improve. Furthermore, research has indicated that collective scaffolding can occur between learners (Donato, 1994). The concepts that bind sociocultural learning together are evident in the teacher education model presented below and this does suggest a prominent role for this theoretical paradigm in teaching praxis in the future. It also provides a supportive environment where integration of teaching practices can be articulated and supported.

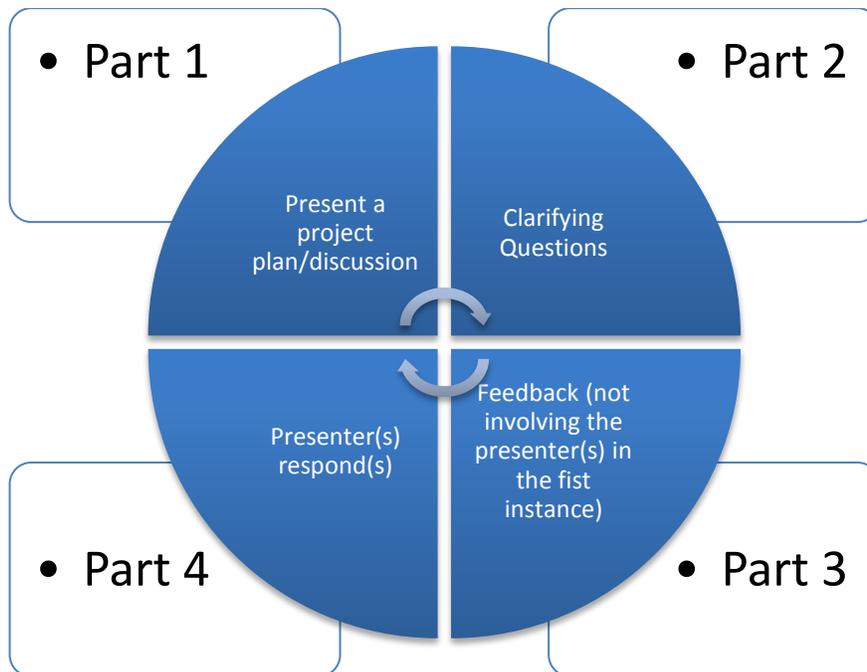
Methodology

Critical Friends Groups (CFG)

A Critical Friends Group (CFG) model of professional development evolved from the Annenberg Institute for School Reform; it based around a collaborative and practitioner-driven emphasis on exploring and analysing student learning (Johnson, 2009). It has been suggested that this approach reflects an increasing trend for professional development in which practitioners behave as managers of their own learning (Dunne and Holts, 1998). Moreover, this practitioner-led learning is situated within the same educational institution and promotes collegiality in teacher education. At this time, most studies have been conducted in western primary and secondary schools (Vo and Nguyen,

2010).

A CFG contains a group of peers characterised by a lack of hierarchy. This interaction must support a democratic, reflective, and collaborative community of learners according to McKenzie & Carr-Reardon (2003, cited in Vo and Nguyen, 2010). The structure of discussions follows what is called a protocol approach (structured discussion guides):



(<http://www.nsrharmony.org/faq.html> - 1).

This is intended to be a non-judgmental exercise. The purpose is to present work-in-progress, or an activity from the classroom, or many other possible issues particularly related to technical and inventive creativity that are heavily reliant on cooperative learning. The feedback part of this protocol does not involve the presenter(s) at first as the other members of the CFG discuss the presentation. The flexible structure of these protocols is a salient element of this kind of dialogue.

The protocol

There are a number of protocols available. One characteristic that they share is a simple structure. That is not to say that this structure limits the focus, or simplifies the content. The protocols are designed to be used over a short amount of time, in some cases 30-40 minutes. As a result, the timeframe can support the busy teaching schedules of most

teachers. This simple structure is a deliberate attempt to remind participants to concentrate on the issue (Little et al, 2003). The protocol also creates a safe environment in which to ask challenging questions in a non-judgmental atmosphere.

A tuning protocol

The tuning protocol is a good example of how these CFG's can be realised. It is concerned with the triangle of learning-the relationship between student, teacher, and subject matter (Curry, 2008). The presenter(s) take an issue, for example, an activity or project they have used in the classroom. Materials related to this are circulated within the group; through this interaction the tuning of the activity or project is discussed. This means both positive and negative aspects of the activity or project are evaluated. The dynamics of how this interaction manifests itself closely relate to the discussion of sociocultural learning above, as it is possible to understand more about how individuals can learn from each other in a spirit of cooperation.

Reflection: a protocol approach

The cycle of action research follows a four-part cycle: Planning-Action-Observation-Reflection. This cycle fits very well with the protocol cycle outlined above. The use of a CFG can enable the reflection process to support and possibly improve the research and support the next cycle. This is because the presenter(s) has/have an opportunity to take a step back from the work and evaluate it in a number of significant ways.

Conclusion

Moving beyond a drive-by approach to teacher education

Reacting to, rather than reflecting in/on, teaching practice, dominates teacher discussions in many institutions. Typified by a short 'drive-by' conversation about how classes are progressing, or an interesting teaching idea to try. The disconnection between the realities of classroom practice and the expectations of the administration sector further isolates practitioners. Prioritising some time in which to reflect on teaching, collaboratively, is not a common activity. The importance of setting aside some time for professional development is clear. The challenges and constraints that educators everywhere are facing require us to be creative, both in a technical and inventive sense. Creative action through collaboration will contribute to a level of collegiality that benefits not only the individuals involved, but also the wider educational institutions and societies in which they are situated.

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The Development of Teachers and their Diagnostic Capabilities. Experience with the Creation and Verification of Diagnostic Tools for Teachers.

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Abstract: The study presents the theoretical background and pragmatic substantiation of the need for teachers' diagnostic capabilities. This approach is based on perceiving teachers as helping reflexive professionals, and accents the need for lifelong development as a permanent process of becoming a teacher. Based on the results of several researches, it points out the need for a focused and systematic development of diagnostic capabilities that form the basis of the psycho-didactic competence. The reflection of practice and research of in-service teachers shows that teachers are shaped not only by their expertise and professional attitudes, but also by specific instrumental competences - so called intellect skills. According to the authoress, these include diagnostic skills and developing the ability to understand, master, evaluate, and analyze the results of diagnostic methods and tools. This text was created under the project VEGA No. titled "Creation and Verification of Screening and Diagnostic Tools for Primary Teachers" and is linked up with a project under the APVV supported by the Slovak Research and Development Agency under the contract No. APVV-0026-07 titled "*The Profession of Preprimary Teacher and Primary Teacher within a Dynamic Concept*".

Key words: teacher, diagnostic skills and capabilities, enquiry tools in educational practice

Introduction

This study is based on current theoretical approaches to teacher training according to concepts of acquiring professional competence through the development of pedagogical skills. Modern theories about teachers stress out the teacher's changing role in education based on permanent process of reflection. The change of teacher's role has many modern pedagogical, psychological, as well as philosophical and sociological reasons. The most important change is that pedagogical concepts renounced the vision of a teacher who is merely a presenter and mediator of knowledge to children/pupils through the curricular content, and an organizer of situations for pupils' training, improvement and mastering of the curricular tasks. In traditional understanding the teacher's evaluation process was relatively separated from the education process; it focused primarily on classification of pupils' performance. However, current tendencies accentuate permanent monitoring of pupils' knowledge, abilities, possibilities and competences. The aim of this approach is for the teacher to be able to purposely and in time revise his actions, behavior and didactic

techniques aimed at children/pupils in order to prevent wrong techniques and misconceptions in cognitive, social and personal development.

Pragmatic reasoning behind this study is that in the population of current children in primary education there has been an increase of phenomena related to irregular development - the most common cause of school failures. At the same time the tendency towards inclusion of pupils with special needs (as a positive phenomenon of social acceptance) becomes a demanding requirement in teacher's work during diagnostic, realization as well as evaluation phase of education. These and other reasons lead to closer focus on the teacher's diagnostic skills – not only during the pregradual phase but also later, with periodical updating, supplementing, training and improvement throughout the course of continual education; in some cases until the teacher reaches the expert level. (Babiaková, 2008)

This study was created as part of the VEGA 1/0802/11 project *Creation and Verification of Screening, Diagnostic and Research Tools for the Primary Education Teachers* (project manager: Mariana Cabanová), and connects to the APVV project supported by the Slovak Research and Development Agency under the contract No. APVV-0026-07 titled *"The Profession of "Pre-primary Education Teacher" and "Primary Education Teacher" within Dynamic Concept"*. (Project manager: B.Kasáčová, PhD.) The aim of this research was to find theoretical and practical preconditions of Slovak teachers to classroom enquiry, propose detection tools, enquiry and diagnostic tools, and verify the possibilities of their use by primary education teachers.

Theoretical Bases

Pedagogical Bases

In earlier approaches to pedeutology¹⁸, teacher's enquiry competence was mostly connected to the evaluation process of pupils' education results. Since the beginning of acceptance of teacher's diagnostic activities as a legitimate part of educational work in 1960s, the understanding of teacher's enquiry competence has changed significantly. (Cabanová, 2011) At first only a diagnostician-specialist, i.e. expert other than the teacher (psychologist, external appraiser, etc.) could be entrusted with enquiry. Therefore, diagnostic understanding and appraisal were mainly in the competence of psychologists, doctors and other specialists. Owing to educometric tendencies, from 1970s the focus was on evaluation of education effects. Rating and ranking trends for evaluation of education

¹⁸ **Pedeutology**: (Gr. δάσκαλος *paideutes* – teacher; λέξη *logos* – word, science) Theory of teacher profession is traditionally used in middle Europe to indicate the part of pedagogic theory and research dedicated to teacher, his training, profession, work activities, etc. It is an interdisciplinary scientific field whose research and theory are also part of pedagogy, psychology and sociology. (Průcha, 2002; Kasáčová, 2002; Kwiatkowska, H 2008.)

institutions and teachers evolved. Since the beginning of 1990s a theoretical approach known as "teacher as reflective professional" has crystallized in Europe, U.S. and Australia. (Pollard, A. 2002, 2005, 2008, 2011; Korthagen, F.A.J. – Wubbels, T. 1995 et.al.) An important element of these approaches is the ability of a teacher to reflect on his thinking, actions and their consequences, and to understand their aspects in pedagogical, psychological and sociological context. This is linked to requirements on the teacher to constantly monitor various aspects related to education, as structured by Pollard (et al., 2011). This professional teacher activity is labeled in actual practice and in theories as "reflective teaching". The author described the reflexive teacher's characteristics as follows: (Pollard, 2011, s. 15)

1. Reflective teaching implies an active concern with aims and consequences, as well as means and technical efficiency.
2. Reflective teaching is applied in a cyclical or spiralling process, in which teachers monitor, evaluate and revise their own practice continuously.
3. Reflective teaching requires competence in methods of evidence-based classroom enquiry, to support the progressive development of higher standards of teaching.
4. Reflective teaching requires attitudes of open-mindedness, responsibility and wholeheartedness.
5. Reflective teaching is based on teacher judgment, informed by evidence-based enquiry and insight from other research.
6. Reflective teaching, Professional learning and personal fulfillment are enhanced through collaboration and dialogue with colleagues.
7. Reflective teaching enables teachers to creatively mediate externally developed frameworks for teaching and learning.

It is obvious that the current educational reality, especially during early education, needs a teacher who understands education intents and is familiar with educational standards, whose pedagogic actions are marked by understanding, who impartially contemplates his actions and is able to reflect on the practice through a prism of theoretical knowledge, and feels the need to objectively know his pupils and their potential, strengths and weaknesses. Based on this he should plan his further actions, in line with his knowledge the children, their social situation and conditions, and in line with present curriculum while taking into account future outlooks. Teacher's reflective competences are closely linked with the development of his research competences pursuant to the "teacher as researcher" approach mentioned by several authors. Teacher-researchers can be characterized as those practitioners who attempt to better understand their practice, and its impact on their students, by researching the relationship between teaching and learning in their world of work. (Loughan, 2002)

Seberová (2013) considers reflection to be the foundation of the teacher's action research and provides reasons why it is important to develop the teacher's research competences

as early as during pre-gradual studies. We consider action research to be an indispensable part of the teacher's work in present schools. "One of the key premises of action research is his direct participation on solving problems arising from educational practice. He is of intervening nature because he intervenes in the reality of the given professional field and one of his main goals is getting to know all processes and their contexts in actual practice as completely as possible, and thus postulate and propose a wide scale of inspirational solutions. Action research in the area of school practice is defined as a process in which teachers/practitioners and other participants of the school life carefully and systematically verify their own pedagogical practice, and phenomena and processes related to teaching and lecturing – through strategies, methods and techniques of pedagogical research." (Seberová, 2013, p. 37)

The changing role of the teacher creates the necessity of permanent reflection on practice and innovations, evaluation of teacher training programs and improvement of their quality. Implementation of theories as well as European legislation is taken into account in Slovakia too. As Kosová pointed out (2013, p. 20), there is an ongoing professional dialog and research results are being published. She also stresses the necessity of acquiring quality research results for international comparisons. The question is - "Do teachers have time capacity and qualification prerequisites to perform a quality action research?"

Psychological Bases

The area of psychological sciences traditionally forms part of teacher training (in this context of primary education), with focus mostly on cognitive, ontogenetic, social and primarily on pedagogical psychology. An important part is usually the psychosocial training leading to drills of dealing with complicated social situations in teacher's life. Although our researches show sufficient and modern theoretical knowledge about children of early school age, knowledge of human personality, developmental learning and behavioral disorders, or social differences, the fact remains that the problem is implementing this knowledge into practice. A special question is how they can unconditionally accept a "different" child – this is related mostly to personality attitude structure of a teacher-in-training. Difficulties in manners and skills of these future teachers are to be expected when performing inclusive education in a class with diversified group of pupils, though of homogeneous age. "Reflective teaching" is a concept that helps dealing with this complicated education practice. The point is that the reality observed and experienced in schools needs to be permanently reflected in theoretical knowledge even during the preparation, and such knowledge must be directly or indirectly applied. Korhagen et al. (2011) conducted a quality research which showed several characteristics of a reflective teacher. These are closely related to psychological personality characteristics but mostly to psychological knowledge connected with research results in the context of primary education teaching practice:

1. A reflective teacher is able to consciously structure situations and problems, and finds this activity important.
2. A reflective teacher uses certain standard questions while structuring an experience.
3. A reflective teacher can easily answer the question what he needs to know and learn.
4. A reflective teacher can adequately describe and analyze his functioning in interpersonal relationships with others.

Social context

The teaching profession is not only an object of pedagogical concepts and academic environment which formulates its goals and training methods. There are several famous studies with respect to this, categorizing teacher training according to various basic features: length of training, institution level; from the perspective of interconnection between theory and practice: cyclical vs linear training, portion of practice in the concept, consecutive (follow-up) vs parallel (follow-with) model. (Kosová, 2011) Apart from these questions which are part of psychological view, sociological views on the profession are also important.

Besides the academic theorizing approach, the process of knowing and exploring the profession of a primary education teacher has several other levels. Primarily, there are characteristics observable during the teacher's actual work performance. This specific is determined by several factors, such as age group of children of younger school age, curriculum's multidisciplinary, as well as certain professional isolation, which makes it very different from other teaching professions. These trends are reflected in the changing pre-gradual training of teachers, which until now reacted more to theoretical, academic and mainly pedagogical and psychological appeals. Currently we can observe a tendency towards activity-based (but not practicistically-mechanical) and reflective notion of teacher training. This concept supports methods of permanent reflection on practice and theories in practical situations. It disagrees with autotelic theorizing and one-sided practicism.

These tendencies manifested in Slovakia through transformation of teacher training during the last 20 years. (Kosová, Porubský, 2011) Naturally, empiric researches focused on systematic investigation of teacher work and analysis of professional activities are also a precondition for outlining the "activity-based" approach. Demands on education are therefore derived not only from basic pedagogical documents but also from the core of professional reality and from performed professional activities, i.e. on professiographic basis.

Empirical Research Bases

The goal of our previous research¹⁹ was to identify particular professional activities of primary education teachers in the conditions of pedagogic reality, discover their structure, find out how much time teachers dedicate to them and what the ratio of individual activities is in relation to professional performance, and connect them to the primary education teachers' professionogram.

The significance of such research is complex. It shows strengths and weaknesses of the researched work system and hence becomes an important foundation for efforts to optimize academic pre-gradual training. It enables to describe more specifically the functions of the teaching profession and their members' stock of the work. It provides a better control, management and assessment of professional activities, hence adding to the improvement of the process of primary education teachers' continual professional education and career development. The results of this detailed research conducted thrice per year on a sample of 6400 examined teachers' days were internationally compared (Slovakia–Czech Republic–Poland) and published (Kasáčová, et al 2011; Cabanová, 2010).

Several selected results are interesting in this context. For example Slovak teachers spend approx. 8% of their working time performing activities related to discovering and identifying individual, family and social differences – i.e. enquiry related activities. To compare, in Czech teachers it's approx. 7.9% and in Polish teachers approx. 11.8% of time. (Kasáčová et al., 2011)

Other researches (Cabanová, 2011, p. 118) found out while examining preconditions of Slovak, Czech and Polish teachers that 28.89% (SK), 30.23% (CZ) and 15.15% (PL) of teachers did not remember whether they had studied Pedagogical diagnosis as a subject. Up to 67% of Czech, and only 44% of Slovak and 37% of Polish teachers, recognized it as a separate subject or part of another subject. Yet these subjects have traditionally been built-in and formed part of teacher studies since 1980s. This conclusion is obvious from the content analysis of pedagogical documents – curricula and learning plans. The teachers stated that after finishing their training they encountered pedagogical diagnosis as follows: SK – 25.58%, CZ – 36.36% and PL – up to 84.44%. The experience with Polish teachers confirmed this finding. They work very intensively with diagnostic, sometimes even boldly psychologizing, techniques (child's drawing and its psychological analysis, sociometry, etc.). This was supplemented by the author's other research (Cabanová, 2010) showing that 51.11% of Polish teachers claim having attended a

¹⁹ Project supported by the Slovak Research and Development Agency under the contract No. APVV-0026-07 "The Profession of "Pre-primary Education Teacher" and "Primary Education Teacher" within Dynamic Concept. *Profesia učiteľ preprimárnej edukácie a učiteľ primárnej edukácie v dynamickom poňatí.*" (project manager: B. Kasáčová)

continual education program focused on school enquiry or pedagogical diagnosis, while in Slovakia it's only 13.95% and in Czech Republic 36.36%. Babiaková (2008) came to a similar conclusion while researching which area of continual education teachers are interested in and feel the need improve in – it was exactly pedagogical diagnosis, finding and identifying pupils' learning difficulties and problems with attention and behavior. These conclusions were precisely the incentive for our research intent.

Knauer (1994) considers knowledge of pedagogical diagnostics to be one of the basic diagnostic competences. Teachers acquire basic theoretical knowledge about diagnostic fields and methods based on trainings focused on pedagogical diagnostics and diagnostic processes during pregradual and postgradual education. The aim of pedagogical diagnostics as a school subject is to provide pedagogical diagnostic competence which – along with other competences– will give the teacher *tools* for observing the child in tutorial-educational process, based on theoretical knowledge and acquisition of skills to identify, notice, analyze and search for pedagogical processes suitable for individual approach to the child. However, knowledge and theoretical information usually have yet to gain an operationalized form, and teachers do not know how to connect theory with situations where it could be used in line of their work. This needs to be achieved by training and development of reflective preparedness, or maybe by providing the teaching community with a *set of enquiry and diagnostic tools* for a prompt and quick application of the searching process based on verbal statements which they assign a simple value. A higher level of teacher diagnostic competence is the skill to create one's own tools for examining phenomena and factors influencing the learning processes, as well as behavior and personality development of pupils of younger school age and their social relations, social background, established preferences, etc. This higher level of teacher competence is closely related to the teacher's research competences and his competence in the above mentioned action research.

Results from Verification of Detection and Enquiry Tools for Primary Education Teachers

At the Faculty of Education, Matej Bel University – Department of Primary and Pre-Primary Education, we have supported our long-term effort to increase the quality of primary teachers' education with various researches, such as "Creation and verification of detection and enquiry tools for primary education teachers". The intention of this project was to create and verify detection and enquiry tools for a primary education teacher. Its goal is to help teachers to early, more easily and more objectively identify a pupil's difficulties manifesting in a way that at the first sight appears unusual, and thus confusing for the teacher. We do not expect the teacher to become an expert in all the possible problems related to learning, behavior, attention, social relations and conditions, personality characteristics or value preferences. We want to help him in the complicated web of pedagogical, psychological and sociological theories by giving him a simple

observation sheet or questionnaire to assess, sort and analyze his observations of children and based on them select an appropriate educational procedure. He can later return to enquiry and compare the entries to verify what changes have occurred, if any.

This approach is based on understanding the teacher as a reflective professional and the teaching profession as an instrumental profession. At the same time it points out the necessity of lifelong development as part of the permanent process of becoming a teacher. Through our researches we highlight the necessity of focused and systematic development of enquiry competences which form the basis of pedagogical competence. Reflection on practice and research of in-service teachers show that the teacher is formed not only by expert knowledge and professional attitudes but also by specific instrumental competences – the so called "intellectual skill set". This includes enquiry skills and the ever-developing skill to understand, know how to use, evaluate and analyze the results of enquiry methods and tools.

We therefore present a concept of creation, verification and evaluation methodology of detection and enquiry and diagnosis tools. Their core consists of a theoretical background of a problem demonstrating in the child's behavior, reactions and acting. The approach of registering and monitoring using magnitude or deviation scales will allow the teacher to recognize, sort and classify common symptoms with a simple tool. The important fact is that the diagnostic tool does not focus on mistakes, flaws, deficits and search for defects. Quite the contrary, the teacher is guided by the tool to sort the observations and compare them with the expected average or standard. Based on the results the tool will offer a way to understand the child's behavior without premature and false labellisation.

The need of enquiry and diagnostic tools for teachers is a current question in a modern school, be it in the sense of understanding the reflective education (Kasáčová, 2005. Pollard, 1997), or for the purposes of creating teaching objectives and planning the education. It also forms an important part of class management and school evaluation (Babiaková, 2011) where a priority emphasis is put on the teacher's enquiry competence in the process of his self-reflection and autoevaluation. At the same time it would certainly be naive and short-sighted to think that merely based on a theory, no matter how fully mastered, a common teacher (beside the everyday routine obligation to teach, prepare for the lectures and evaluate the process and education effects) would be able to methodologically correctly create, correctly use and effectively evaluate enquiry tools of his own design.

Our researches clearly show that primary education teachers dedicate to enquiry-related activities during their work approx. 7.53% of their total working time capacity (Kasáčová – Tabačáková, 2010). We know from discussions and research surveys that they would find it beneficial to have tools for finding and refining knowledge about children - even beyond the level trainings in individual didactic and curricular innovations focus on enquiry drill and creation of reeducation and individual procedures.

What teachers expect from a diagnostic tool

Teachers expect the diagnostic tool to include the following content and parameters:

- it should have simple structure,
- it should be linguistically comprehensible for the teacher, parent of child (depending on who it is addressed to and its purpose),
- it should be simple to evaluate,
- it should include guidance on how to evaluate the results and what to do with them,
- it should include an evaluation manual and appropriate wording of the achieved level,
- its use and evaluation shouldn't be too time-consuming,
- its form should be easy to monitor, ideally a multiple-options choice,
- its results should help the teacher in communication and reasoning with colleagues, experts and parents.

The above stated realization inspired us during the creation of the VEGA 1/0802/11 project Creation and Verification of Screening, Diagnostic and Research Tools for the Primary Education Teachers.

Sorting the Work Procedure when Using Diagnostic Tools

In clinical and counseling practice there are assessment scales, tests and handbooks for use by psychologists and specialists, many of them standardized, quality and exact. (Valihorová, M. 2007) But teacher's professional competence and qualification often do not allow for a common teacher to use them due to administrative requirements or certification of use. Let's not forget that the teacher's primary role and job description is something different than full dedication to all individuals in a classroom.

Therefore the objective of our tools is:

- primary detection of reactions which manifest in behavior and during regular school activities, not an analysis of inner experience or other latent phenomena and causes (this falls under other experts' competence)
- classification of reactions into several categories according to problem specifications, while each specification has its own assessment scale
- teacher's notes are done through an assessment scale, with the score related to expected or acceptable performance

What is beneficial for the teacher's work is that this prevents him from making a premature diagnosis which can cause wrong evaluation, labellisation and, consequently, wrong pedagogical actions and ineffective pressure on the child.

A reliable tool leads the teacher to controlled sorting of knowledge about children acquired through various sources:

- own observation
- existing documentation

- notes on information from parents
- from other colleagues, etc.

Subsequently it offers the right choice based on self-reflection and assessment of one's possibilities:

1. I understand the issue and I know what to do;
2. I understand the issue and I know whom to ask for help;
3. I might not understand the issue but I can expertly, briefly and impartially describe it to an expert using the notes classified in the diagnostic tool.

We have selected these generalizations from conclusions of the verification process:

In partial researches by Kasáčová – Sabo (2012), Kasáčová – Sitková (2012) and Kasáčová – Száková (2012) we subjected the proposed tools to verification and self-reflection through qualitative and quantitative procedures. There have been three types of focus on possible problems a primary education teacher may commonly encounter, and for which we created three variants of pilot tools: for the teacher, for parents and for children. Also interesting are related conclusions in these studies:

1. Diagnostics of specific learning disorders by Kasáčová – Sitková (2012). The verification was done through a qualitative measurement of congruence/deviation in the same child's evaluation by two teachers (primary and pre-primary), with an assessment sheet version for parents. We found out that the tool reliability deviation is 0.7% among teachers and 1.5% among teachers and parents, while parents judged the children more strictly. We looked for an inter-aspect comparison.
2. Diagnostics of behavioral and attention disorders by Kasáčová – Sabo (2012). In this tool the verification was done through a qualitative process where the researcher examined active teachers' attitudes and willingness to accept a child with different behavior and attention span. While working with this tool teachers reflected on their own progress in knowledge of the topic and change in their view of a child with difficulties from "this child is problematic for me, let XY deal with it..." towards "I understand this child could be in danger, I want to understand what is happening to him/her and I want to help". We compared attitude of an individual evaluator after a lapse of time.
3. Diagnostics of value preferences by Kasáčová – Száková (2012). The tool was created in three versions for use by children of younger school age. It is based on a value structure model (Schwartz, 2007 and 2008). It is meant for measuring their preferences of generally accepted values, with a version for children to express how they see their parents (mother and father both). It also measures their

identification with a described person. It is exactly the intra-aspect comparison that is interesting, with the evident difference between children describing themselves and identifying themselves with the described person, children assessing somebody else and children stating how it should be, what is right and acceptable.

Conclusion

Work with an enquiry tool is a useful aid for the teacher in quality and deliberate development of theoretical knowledge and, subsequently, diagnostic competence. It can serve as a model for creation of analogical tools for other research or diagnostic purposes. However, it shouldn't be overestimated.

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The Way towards Self-evaluation and Professional Self-development of Teachers in Transforming Countries

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Abstract: The study aims to analyze the contexts and reasons why the post-communist transforming countries fail to promote the perception of teachers as self-regulating autonomous professionals, who think critically about their work and set themselves the goals for their self-improvement. The teachers' transformation from executors of the state-prescribed decisions to individual creators of their own curriculum and educational conceptions is not only given by the historical context, but also by modern dilemmatic political, socio-economic and philosophical aspects. Due to these, the originally positive idea of career growth, based on autonomous professional development, changes to rigorous standardization of prescribed measurable performance and turns to business with respective professional education in controversially directive, as well as neoliberal conditions. The teachers' subjective experience and disappointment from unfulfilled expectations, non-implemented reform changes, unprofessional and non-systemic political decisions, but also the uncertainty, declining social status and difficult working conditions create inner barriers in their focus on the personal development. Traditional academic or behavioral models, or professional education programs are based on externally driven change and do not actually stimulate the genuine personal need for teacher's self-development. The main issue is to be seen in transforming the nature of professional education, in order to induce changes that are driven from within by the teachers themselves. Personalistic and socioconstructivistic approaches to professional development require constant self-evaluation of teachers based on guided reflexion and self-reflexion of their professional actions and thinking. However, in the conditions of the post-socialist countries this means overcoming some specific social and personal obstacles. It is necessary to identify and validate ways to break through strongly rooted "culture of non-interference", perceiving the presence of another expert or colleague on one's teaching classes as a kind of supervision, aspects that obstruct the extension of education forms based on the reflexion of the teaching practice, on the colleague cooperation or on feedback from "a critical friend". Similarly, it is important to create a safe environment for such education directly in schools, so that the teachers learn to see the change as non-threatening, necessary and personally meaningful. A personal need is an essential condition for achieving a regular self-evaluation and durable changes in the professional procedures. The present study was created with the support of Slovak grant agency VEGA as part of the VEGA 1-0543-12 project "Autoevaluation of Teachers as Part of the School Autoevaluation" at the Faculty of Education, Matej Bel University

Key terms: auto evaluation, professional development, self-development, education reform, continual teacher education, pre gradual teacher education

Introduction

Slovakia is one of the countries attempting to transform their education system after 1989. However, transformation of any social system depends on changes of its participants, in this case on a change in teachers' thinking and professional actions. According to various philosophical, sociological and pedagogical opinions, among the indisputable signs of profession and professionalism are mainly the autonomy in decision-making and demanding expert skills needed in order to carry out independent expert evaluation of one's clients' needs (The International Encyclopedia of Education, 1994, Korthagen 2001, Hargreaves, 2002 Kasáčová 2003, Spilková 2004 et al.). It is therefore very important in transforming post-communist countries to promote perception of a teacher as a self-regulating autonomous professional with critical attitude towards his work, appraising his professional activity through autodiagnosics and self-reflection, and on this basis establishing his self-improvement goals (Kosová, 2006a). Traditional academic or behavioral models and professional education programs, based on externally controlled changes, do not lead to any true personal need for self-improvement in teachers. The key issue is transformation of professional education in order to induce changes from the inside, controlled by teachers themselves.

Slovakia is an example proving that this process is especially complicated. McKinsey came to the same conclusion. It is a company analyzing the development and reforms of educational systems, which it evaluates using five levels: poor — satisfactory — good — great — excellent. It also compares measures adopted by individual countries with pupils' results in various international assessments. According to McKinsey, Slovakia got stuck on the third level ("good") – its results are stable but there is no long-term improvement. Last efforts leading to two-level curriculum and higher degree of pedagogic autonomy were an attempt to jump to the highest level without preparing the people – development of teachers' professionalism and increase of the quality of internal cooperation processes in schools were omitted. Administrative measures recently taken by the Slovak Ministry of Education are focused retrospectively on the "satisfactory" level, which does not help the quality of the school system. It is necessary to focus on *improving the quality of teachers' training, increasing the efficiency of introducing teachers into their profession, increasing professionalism of present teachers through continual effective education, preparation of directors for development of school and management of people, and increasing a school's responsibility for its decision-making processes* (McKinsey, 2011).

In Slovakia, the transformation of teachers from executors of decisions dictated by the state to autonomous professionals and independent creators of curriculum, as well as their own education concepts is hindered by several obstacles. These are: historical context, contradictory transformation of the school system after 1989, as well as insufficient quality of pre gradual and continual teacher education.

Historical context

Since the 18th century, for over two hundred years, Slovakia has been marked by ***strong centralizing tendencies in education policy and the effort to control education processes by the state***, in which the teacher is seen as a "clerical worker" ensuring compliance with state standards. These tendencies have their origin in the modernization efforts of the Austrian-Hungarian empress Marry Theresa (Ratio Educationis) and were significantly emphasized by the nature of the political regime, which was ruling this region for more than 44 years (1945 - 1989). They are more or less still in effect nowadays and they return after each loosening, especially when problems arise. Unfortunately, this usually happens in form of centralizing amendments to the pro-reform oriented legislation. The habit of being controlled from above and above only is closely related to so called "culture of non-interference", isolation of teachers among themselves, which is typical of transforming countries (Pol — Lazarová, 2000), long-lasting non-existence of education forms such as mentorship or tutorship, unwillingness to admit a problem to one's own colleagues, etc. — which complicates the road to "schools which learn". Pedagogy as a science and academic training of teachers are also significantly marked by central control. Both were under the strictest governmental control during socialism, which did not allow infiltration of any ideas, particularly those about autonomy and self-governance, from Western Europe. All of this needed to be "discovered" after 1989.

Despite today's reformatory proclamations about educational goals in the form of pupils' competences and skills, the ***tradition of informative instruction***, based on the encyclopedic effort to acquire a significant portion of all important sciences, appears hard to overcome. Particularly during socialism the education policy used this idea in a very effective way as the tool for centrally influencing and controlling the contents taught at schools. Because political mottoes and education objectives of that time were often impossible to live up to, teachers instead focused on relatively neutral contents of schoolbooks which thus changed from "means" to "objective" and became the gist and the purpose of education. In this still persisting concept, the teacher is the mediator of the schoolbook content which the pupils are expected to acquire primarily on the level of memorizing and understanding. Focus on content and its memorizing was confirmed by the PISA 2003 international assessment, according to which Slovak pupils use the strategy of learning by heart much more often than their counterparts from OECD. Their results in problem-solving were below-average (Learning for Tomorrow..., 2004). PISA 2009 indirectly confirmed this too – reading literacy of a Slovak pupil is predominantly influenced by factors outside the child's control (i.e. socio-economic background and gender), not by his/her learning strategy (PISA Results..., 2010). Another example of this are detailed and over-complex demands on education despite the two-level curriculum, increase in contents with every new EU requirement (e.g. financial, business literacy) or restriction of use of books other than those approved by the Ministry. Teachers are being increasingly perceived as implementators of curriculum determined from above, rather

than its creators, for example they concentrate the greatest part of criticism of any reform mainly on late delivery of new schoolbooks. In this context also the recent state education policy, heavily focused on external testing and monitoring of many subjects, appears counterproductive. Unfortunately, the predominant focus on content of education is also the outcome of academic model of teacher training which higher education institutions, in their endeavor to prove their university level, seem to prefer.

It is sometimes hard to understand for our colleagues from democratic countries in Western Europe that these two traditions in education are strongly enrooted in Slovakia; they constantly influence the educational reality and have a retardation effect on the struggle for autonomy of both the school and the teacher.

Transformation of the Slovak education system and its effect on teachers

The transformation of the education system went through several stages observable in most of the transforming countries of the region (see Birzea, 1996, Kotásek, Greger, Procházková, 2004, Kosová, Porubský, 2007, Halász, 2007).

The **1st stage** was short and happened shortly after 1989 change of political regime. It was characteristic in its *deconstruction* of the old structures and ideologies, and forming of development (mostly idealistic) perspectives of further advancement of the society. Because it was obvious what needed to be discarded, the state education policy and pro-reform attitudes of teachers were in harmony during this stage. This, however, didn't occur again in later stages.

The **2nd stage** (from 1992 to approximately 1998-99) is happening in the times of turbulent competition of the political ideologies for the future of the society on the line of openness (Europeanization) vs. conservativeness (nationalization) and alternations between the two. Due to economic recession and skyrocketing unemployment the term "reform" publicly became the synonym for worsening of the living conditions. This also hit the sphere of education policy. The political parties emphasizing the ideology of conservativeness spoke about the traditional high quality of education, which needs to be maintained. Systemic changes were out of the question, the changes took place merely on the level of formal organization, management and financing of the education system. Even though an attempt was being prepared on the state level to conceptually launch a systemic reform from above (1994, the Konštantín project), the core of the education process was marked on the macro-level by stiffness, policy of minimum changes and endeavors to maintain the "status quo".

Paradoxically, this period prepared the best conditions for systemic changes on the micro-level through the **innovative movements of teachers**. In the education practice there was a dynamic innovative movement unprecedented in the history of Slovak education system. Innovative stimuli came mainly from foreign non-governmental organizations, which focused on changes of the education philosophy, aimed at

influencing teachers' educational strategies and forming educational alternatives for schools. Enthusiastic teachers from all levels of schools, including higher education institutions, started to group around them, create their Slovak counterparts, organize educational activities and publish didactic materials. Thus, innovations were spreading spontaneously, but with relative intensity. They influenced teachers' thinking about children's needs and development, one's own self-reflection and the necessity of changes in one's own pedagogical actions. They manifested in forming of teaching communities, exercising of cooperative and project teaching strategies and methods, introduction of alternative ways of assessment, etc. According to researches, approx. 60% of teachers support humanization changes, and 25% implemented actual innovations (Kosová, 1997). Innovative teachers fought for abolishment of centrally controlled educational content for all pupils, demanded more autonomy for both schools and teachers, and more possibilities for professional self-development. At that time, innovative teachers played the role of education reform creators; unfortunately, the state's education policy perceived only as the executors of the completely prescribed obligatory curriculum.

The **3rd stage** of the transformation process is characterized by a **declarative turnaround in the education policy of the state**. In 2002 the Parliament adopted the National Program of Education (Milénium), which defined a new way of school system development, inspired by ideals of innovative movements. However, its fulfillment did not gain a wide political support and thus the transformation stagnated on the level of partial, systemically unchanging amendments of the Schools Act. This negatively affected the micro-level of the education system. Until 2008, for the whole decade the reform movements were blocked by a barrier of misunderstanding by the state. Education alternatives and innovations were maintained at the cost of great effort, in opposition to school management, education authorities or rigid curricula. Unfortunately, in the struggle against the rigid legislation granting very little freedom, under the constant stress of inspections and permanently uncertain existence, several education alternatives were terminated at the turn of the century, and some educational programs ceased their activities as well. All this led to visible disappointment, resignation and frustration of teachers, and weakened innovative movements in real educational practice. Fortunately, however, this innovative movement permanently influenced higher education training in pedagogy, psychology and subject-specialized didactics. Various education concepts became part of the teacher studies, as well as school autoevaluation, teacher's autodiagnosics and self-reflection, psychosocial training, didactic innovations, etc. Communication circles, cooperation activities, projects, portfolios, self-correcting cards, mind maps, etc. became common part of everyday work for many teachers in schools.

Slovakia's entry to OECD (2000) and the European Union (2004) brought new stimuli into the macro-level transformation, but also the country's unflattering results in international assessments (PIRLS, PISA, TIMMS). This manifested in a new curricular policy heading towards a two-level model of curriculum and the focus of the objectives on the

development of a pupil's key competences. The **4th stage** of the Slovak school system transformation happens in 2008, when the state education policy begins to focus on creating legislative conditions for a systemic reform, enacting the new education law. Finally after twenty years the law establishes a **school education program**, as a reflection of the organizational and educational autonomy of each school – they can now supplement the obligatory national education program as per their needs. School autoevaluation and professional development of teachers were thus meant to acquire a new significance.

The two-level curriculum and the national education program were implemented quickly, without pilot verification or preparation of teachers. During the summer holiday, the teachers were supposed to transform from long-time implementators of educational contents ordered by the state to active creators of school curriculum and subjects taught. At the same time, new curricula were issued, formally stressing pupils' competences on the one hand, but on the other hand containing over-complex and uncoordinated content standards for all subjects even within individual grades. Teachers found themselves in a situation when several of the prescribed pro-reform legislative measures were impossible to carry out due to conflict with official curricula, which lead to further disappointment, skepticism and passive resistance (Porubský, 2010). All this is happening in the period when Slovakia's teaching profession is afflicted by all signs of crisis (see Kosova, 2006b), when the salaries are about four times lower than the OECD countries' average and the very lowest out of all the monitored countries (Education at Glance, 2005, 2011). It is therefore no wonder that in the first years of the reform the teachers often considered school autoevaluation and self-evaluation to be a useless, formal, time-consuming burden.

The *Act on Pedagogic Employees* (2009) was meant to improve the situation and change the teachers' skepticism. It progressively deals with many questions concerning the status of teachers, introduces systemic professional development in line with the credit system of continual education, and for the first time gives teachers a perspective of career and financial growth. But the Act admitted any various subjects to be involved in highly professional teacher education, and former twenty years' innovative teacher training was not counted in their career growth scheme. We believe that teachers' subjective experience and disappointment due to long unfulfilled expectations, unrealized reform changes, unprofessional and unsystematic political decisions, as well as uncertainty, deteriorating social status and underestimation of the profession create rather strong barriers in teachers' orientation on their own personal growth.

Dilemmas in teacher training

Current teacher training in Slovakia is marked by many dilemmas arising due to parallel effect of centralist-directive demands of the state and neoliberal socio-economic influences. After the adoption of the Act on Pedagogic Employees, many projects focused

on **continual teacher education** were launched with massive support from the European structural funds. The greatest part of finances goes to nationally oriented projects realized by state institutions for teacher training – however, higher education institutions are not eligible applicants. A smaller part of finances became part of market and professional education business. Higher education institutions, non-governmental organizations, various companies and other entities compete for it, creating educational programs – accredited, though of varying quality. Teachers began to educate themselves much more. According to professionographic researches of teacher activities dedicated to professional development, they devote 13.99% of their work performance to self-education, out of which two thirds consist of continual education and the rest of self-study (Babiaková - Cabanová, 2011, p. 126 – 128). Nevertheless, the main motivation is not the professional development towards expertise in teaching but rather acquisition of credits needed for attestation, which is the only way of increasing their low salaries. Therefore they attend every available course, from work with interactive boards to skiing course "without reflecting the school strategy, without a reliable assessment of one's own education process, without the teacher action research, without self-reflection and the following self-projection" (Babiaková, 2010). Higher education institutions became little competitive because they must offer many continual education programs for teachers of higher quality outside the projects, i.e. for the participants' money.

On the other hand, we need to point out that apart from the efforts to amend the legislation in the recent years, many programs focused on school and teacher autoevaluation, on systems of introduction and evaluation of quality of schools and education, as well as teacher education for the sake of development of school or groups of schools have been created with financial support from the European funds. Gradually (even though sometimes only formally), terms like autoevaluation or self-reflection become part of common vocabulary of education policy but also teachers themselves. Little by little the above mentioned "culture of non-interference" is being overcome, the number of schools carrying out regular autoevaluation is increasing, along with the share of teachers who recognize the necessity of professional development. A survey among 224 primary education teachers in middle Slovakia showed that amid the five most important competences the respondents feel the need to develop are also the evaluation of one's own pedagogical activity, ability to create one's own plan of professional development and identification of one's own educational needs – together they form 35.3% of responses (Babiaková, 2010).

The question of teachers' attitudes towards self-governed professional development is closely related to **teachers' pre gradual training** at higher education institutions, which is still significantly academically theoretic and does not sufficiently lead to the development of professional teacher competences. Teacher training in scientific disciplines of individual subjects and the pedagogic-psychological and didactic part of their training are not interconnected enough. Even though since 1990s, when the education programs of

foreign non-governmental organizations were culminating, personalized and socio-constructivist attitudes towards training of teachers as reflective practitioners, based on guided reflection and self-reflection on professional activity, became established in pedagogical theory, this does not work in practical training provided by higher education institutions – for several reasons.

At first in the deconstruction stage (1990 – 1992) under the pretense of "de-ideologisation of studies" pedagogy was almost completely devoid. Because higher education institutions had a complete autonomy in the structure of training at the time, this part of preparation only remained where it had a good tradition. Academic orientation on science in school subjects was further strengthened in effort to maintain the indubitable university level of teacher training. Only well-developed teaching practice throughout the entire 5 years of training remained. Until the end of 1990s the pedagogic-psychological training had been innovated and restored but due to lack of finances in the education sector the teaching practice started to become limited. The acceptance of the Bologna Process' principles led to obligatory division of teacher studies into Bachelor's and Master's degrees and creation of framework description of study, which the higher education institutions have to comply with. Due to political discussions at the time about adequacy of the Bachelor's level of studies for the teaching profession, the authors of descriptions moved the didactic (professional teaching) part into the Master's level, so that a person with the Bachelor's degree wouldn't be able to work as a teacher. The majority of practical teacher training was also concentrated in the Master's level, thus becoming inconspicuously shorter. Slovakia is one of the countries with the lowest share of practical preparation in teacher training; due to significant autonomy of higher education institutions it represents about 5 – 8%. In the majority of the EU countries the share of practical preparation is much higher – for example over 20% of time in Finland and Sweden, 25% in Netherlands, France and Ireland, over 30% in Denmark, Iceland, Belgium, Austria and Portugal, and even over 40% in Norway (The teaching profession..., 2003).

Such situation is not completely adequate for the model of preparation of teachers as reflective practitioners, nor for the development of their professional competences, because these are based primarily on the ability of self-reflection, auto evaluation and expert reflection on one's own practice (Korthagen et al., 2001). This was also proved by OECD's research study TALIS 2008. In the category of graduates and teachers up to 30 years of age, more than a half of the Slovak respondents named as five areas in which they feel insufficient preparation and pressing need for further education: teaching of pupils with special educational needs - up to 76%; maintaining pupils' discipline during the lesson - up to 68%; class management and organization - 58%; didactic knowledge of teaching procedures in their primary subject - 57%, and pupil counseling - 53% (Prax učiteľov..., 2008, p. 59). Given that these are the core teacher competences, it clearly demonstrates the shortcomings in higher education training of teachers. Slovak faculties of teacher studies requested a return to non-structured teacher training and in 2011-12

under the leadership of the Faculty of Education of Matej Bel University in Banská Bystrica submitted a complex proposal for modification of the higher education teacher training, including draft adjustments to the description of teacher studies and related research (Kosová et al., 2012). The proposal, which has been at the Ministry of Education's desk for two years now, calls for the end of teacher studies' division into degrees, strengthening of the didactic and practical part of the training, introduction of a coherent model of reflection on the practice from the first until the fifth year, better orientation on teacher competences, increase of the overall state support of teacher studies and related research, etc. Faculties of teacher studies, whose accreditation is unfortunately decided by experts from other fields in Slovakia, still believe that once the ongoing discussion ends the proposal will be adopted, and therefore focus on projects such as the one within which this study has been created.

Conclusion

A complicated political and social development in post-communist countries and contradictory educational reforms show, that Slovakia and similarly others transforming countries are facing a long way to the transformation of teachers into self-regulating autonomous professionals with critical thinking, who reflect on their professional activity and adjust their professional development accordingly. What we need is a reconstruction of pre gradual as well as continual education of teachers in order to influence them more effectively, but also an amendment of legislation which would give both schools and teachers more autonomy. All these problems are being continually dealt with. Maybe standards for teaching professions, which have been in preparation for over 8 years and highlight the orientation on professional teacher competences, would help too. They are divided into three large areas and the important thing is that one of these areas consists of competences focused on the teacher's self-development (for details see Kasáčová – Kosová, 2007). After their adoption they should become the framework for both pre gradual and post gradual professional training. On the other hand, there have been worries that in an environment with strongly enrooted efforts for central state control they could be abused to intimidate teachers and for quantity-focused testing and assessment. We need a research of more effective strategies and methods of guiding teachers and schools towards auto evaluation and self-reflection but also to identify and verify ways to overcome the strongly enrooted "culture of non-interference" or the perception of a colleague's presence at the lesson as inspection, which prevent the spread of education forms based on reflection on the practice, collegial cooperation or feedback from a "critical friend". We also need to create safe environment for such forms of education directly in schools to show the teachers that the change should be perceived as nonthreatening, needed and personally meaningful. Because personal development cannot be ordered, a crucial precondition for regular auto evaluation and more permanent change in professional acting is the emergence of need which would make self-development meaningful.

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Research Observatory

Norwegian TVET Teachers use of new technologies

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Abstract: The purpose of the study is to have a closer look at the use of new technology in Technical Vocational Education and Training (TVET). The use of the word new technology instead of Information and communication technology (ICT) is so we don't limit the use of technology. The understanding is that technology can be described as human innovation in action. (ITEA, 2006) The complexity in TVET is that digital skills should not only be used to read, write or count, but also to manage complex work tasks within the work area. It will be a delicate balancing act to dedicate skill to ICT and other new technologies as they often merge into one another.

Keywords: New technology, TVET- teachers, Education, Schools, ICT

Introduction

New technology in everyday life can often be perceived that it is all about Information and Communication Technology (ICT). It is important to emphasize that new technology is more than the use of ICT, and that ICT is only a small part of the technological concept. (ITEA, 2006) At the same time it is important to recognize that ICT has played a significant role in the last decade's rapid technological development.

ICT has thereby been a major focus of school authorities in Norway, as well as in the whole world. The school authorities have made an increasing effort to integrate ICT into most aspects of school practices (EU, 2006; KUF, 1995, 1999, 2000a, 2000b; Liu & Huang, 2005; LK06, 2006; Tearle & Golder, 2008; Tezci, 2011; UDIR, 2012, 2013; Wikan & Molster, 2011).

Concurrently, there has been rapid technological developments, thus it might be difficult to recognize occupations that existed just a few years ago. The graphic industry can be an example from industry that has already been subject to major changes. While previous occupations were mostly hand crafted, a large number of occupations today are digitally driven. This means that it has changed from working with lead to Bytes. Previously, craftsmen worked primarily in media companies. However, they have today an expertise that can be useful in various types of business. The overall digital literacy of these skilled workers is so high that they are attractive to employers of jobs completely different. The

technological tool used by the skilled workers has become so accessible and easy to use that one can expect an increased pressure on them to provide quality that rises well above what the ordinary man in the street is able to do (NOU, 2008).

Both of these aspects will influence the teacher's work with education. In this paper, we will examine what the Technical Vocational Education and Training (TVET) teachers use, and their relationship to new Technologies, focusing on the general use of ICT in particular and new technology in general.

Technology

Technology can be described as practical embodiment, i.e., the application of the knowledge of tools, machinery, techniques, systems or methods in trade or industry in order to solve a problem or perform a specific function. In this paper, new technology is understood as the latest in the field, whether it comes to new tools / equipment, techniques / systems / production, digital technology, materials or tasks. This theoretical and operational definition of technology is based in the general understanding of technology as stated in the book *Technological Literacy for All*(ITEA, 2006).

Technological competence can then be viewed as the application of that knowledge and methodology in response to perceived human wants or needs(EU, 2006).

Changes in the working life

In recent decades, technology has had a major impact on work life. "From muscle power to computer control" is an expression that exemplifies changes in the manufacturing industries. Previously, manufacturing has largely been manually oriented and controlled by limits, which were determined and mediated by a supervisor or engineer in a hierarchical structure. A skilled operator was accurate and patient, and the work was often physically demanding. Today, accuracy and patience is still an essential characteristic, but the influence and position of the operator in the organization has changed significantly. The organization joints that previously held the operator are largely removed, and the operator has an independent responsibility for management of manufacturing processes. A prerequisite for this development has of course been the technological innovations and the transition to computerized processes. Ever increasing competition has, in turn, resulted in pressure on efficiency and rationalization. This does not mean that manufacturing becomes less important, but it points out the changes that are taking place in the manufacturing jobs. The remaining jobs are becoming more knowledge-intensive, high-tech, exciting and with increased demands for innovation and renewal. Tasks that only five to ten years ago were in the engineering domain are handled nowadays by operators that have a trade certificate. (NOU, 2008)

Other technologies developing at full speed in today's society are, for example, simulation and robotics. In the building and construction activities, the "Building Information Modeling

(BIM)” 3D tool has become necessary as it allows all the major players to set their requirements. BIM is a process involving the generation and management of digital representations of physical and functional characteristics of a facility. The resulting building information models become shared knowledge resources to support decision-making about a facility from its earliest conceptual stages up to design and construction, and throughout its operational life and eventual demolition (Vianova, 2013).

Robots will also enter the stage. And here one does not talk about large industrial robots, but smaller types that can add tiles to a floor or drill holes in a roof. A robot supports the construction projects, where it can, for example, drill 250 000 holes in the roof, and not least reduce the strain that the worker is exposed to. (Seehusen, 2013) The question then becomes who will control these robots and what kind of new skills or competences will be necessary for the builder.

In addition to pressures on efficiency and rationalization due to increasing competition, demands for better quality and for meeting environmental standards, safety and work environment are also factors pushing the technological solutions forward. With few exceptions, as a consequence of technological development, there will likely be a greater demand for new and more advanced skills in occupation. However, the development might not necessarily be the same in all parts of the working life (NOU, 2008).

Digital competence

Within the complexity of changes in the work life, it can be difficult to determine which part of the changes is in the ICT domain, and which part is a different technology. As a result of this complexity, we use the word new technology instead of ICT so we don't limit the view. However, it is still necessary to discuss what ICT is vis-a-vis digital competence so we can get an unmistakable view of each one. When it comes to digital competence, this expression is one among several others used to describe the confident, critical and creative use of ICT to achieve goals related to work, employability, learning, leisure, inclusion and/or participation in society (Ferrar, 2013).

In practice, it is not clear what it actually means to be digital competent. There are several factors that are important to make the distinction; therefore many different expressions such as digital literacy, media literacy, ICT competence, digital literacy and e-knowledge or e- competence are used. Other factors include the person, his/her background, the occupation and in what context. Are they students, teachers or professionals? Are they in school, at leisure, or perhaps at work? An additional factor is the understanding and the interpretation of it as time goes by (Cartelli, 2010).

As new technologies develop, so do the needed competences for using them. Technological innovations as well as their appropriation by users are hard to predict, and

even to the extent that future developments can be predicted, it is often hard to see exactly how they will affect the way we live (Janssen & Stoyanov, 2012).

How to use computing technology as a tool for learning within meaningful contexts of learning can be seen from different points of view. It is widely accepted that competence in handling ICT is an important asset and requirement for citizens in modern societies. It is also believed that ICT in schools will enhance subject learning. (Wikan & Molster, 2011) In the Norwegian government White Paper ICT in Norwegian Education plan for 2001, three important aspects to integrate ICT in education are specified - ICT as a pedagogical tool, ICT as a stand-alone subject at different levels, and ICT as a tool used in other subjects and areas. And they emphasize the challenge for teachers who work at different levels and need to keep abreast of developments (KUF, 2000a).

In autumn 2006 the Ministry of Education and Research introduced the Knowledge Promotion Reform (KPR), which was a comprehensive curriculum reform. The reform places increased focus on basic skills and knowledge promotion through outcome-based learning. Under the Subject Curricula, the five basic skills are integrated and adapted to each subject. These skills are: the ability to express oneself orally, the ability in literacy and numeracy, the ability to express oneself in writing, and the ability to use digital tools.

These skills are basic in the sense that they are fundamental to learning in all subjects as well as a prerequisite for the pupil to show his/her competence and qualifications. All subject-specific curricula (LK06, 2006) describe how the five basic skills contribute to developing the pupils' competence and qualifications and how these skills are integrated into the subject. Each subject curriculum integrates competence aims, basic skills and subject content. The skills are consequently expressed in different manners and to a varying degree in the different curricula, depending on the relevance of different skills aspects for the subject in question.(Udir, 2013)

All subject-specific curricula should include digital literacy. Within Automation it is expressed as:

“Digital literacy in Automation involves doing information searches and producing technical documents for systems and units, as well as assisting in troubleshooting. This also involves programming, configuring, troubleshooting and documenting using digital tools.” (LK06, 2006)

Another example is taken from Construction, with the following description:

“Digital literacy in Construction involves using digital media for planning, production, documentation, quality control and communication. It also involves using digital tools for measuring, calculating, drawing and image processing.” (LK06, 2006)

There are different descriptions for all of the 172 occupations that are part of TVET in Norway. As the examples show, it is not only the use of digital literacy as a production tool for documentation, but also a recognition of a competency calculated into the actual trade. They shall also have an expertise in measurements, calculations, drawings, programming etc. depending on career choices.

In the Framework for the five basic skills, the Norwegian Directorate for Education and Training has defined digital skills:

“Digital skills involve being able to use digital tools, media and resources efficiently and responsibly, to solve practical tasks, find and process information, design digital products and communicate content. Digital skills also include developing digital judgment by acquiring knowledge and good strategies for the use of the Internet.” (UDIR, 2012)

They further elaborated that digital skills is a prerequisite for further learning and for active participation in working life and a society in constant change. They add that it has changed many of the conditions for reading, writing and oral forms of expression, and also applying new learning strategies. And, thereby, it is a natural part of learning both in and across subjects.

They have also operationalized digital skills in the following sub-categories:

“Search and process means being able to use different digital tools, media and resources as well as to search for, navigate in, sort out, categorize and interpret digital information appropriately and critically.

Produce means being able to use digital tools, media and resources to compose, re-apply, convert and develop different digital elements into finished products, e.g. composite texts.

Communicate means using digital tools, resources and media to collaborate in the learning processes, and to present one’s own knowledge and competence to different target groups.

Digital judgment means being able to use digital tools, media and resources in a responsible manner, and being aware of rules for protecting privacy and ethical use of the Internet.”

(UDIR, 2012)

A committee appointed by the government has expressed that this description helps to look at the barriers to digital value creation. It shows an imbalance in the definition of digital skills due to an excessive emphasis on communication, text and the humanities and less weight on algorithms, numbers, math and technology.

The committee points out that in definition of the framework, the sub category “produce” is limited to using the tool for creating multimodal texts. The committee refers to the EU's competence description (EU, 2006) and states that it is necessary to consider what each one of the groups, be it constituted of specialists or of generalists, needs in terms of digital literacy. And we have a need for professionals who understand the technology and services, and thus can participate and make decisions in the information society and in their workplaces. The teacher must not only be able to use digital services, but they should also be able to link expertise in ICT towards their fields. The committee also believes that digital skills are still not sufficiently taken into school and operationalized. The schools are not sufficiently focused on understanding the technological community. (NOU, 2013)

Digital skills should not only be used to read, write or count, but also to manage complex work tasks within the work area, but as stated earlier it can be difficult to determine which part of the changes is in the ICT domain, and which part is a different technology. It will be a difficult balancing act to decide what belongs to what as they often merge into one another.

Methodology

The context

Norway has quite well established programmes in technical and vocational education at the upper secondary school level. Altogether there are nine basic vocational education programs covering the areas of (1) Building & Construction, (2) Electricity & Electronics, (3) Technical & Industrial production, (4) Service & Communication, (5) Media & Communication, (6) Restaurant & Food processing, (7) Healthcare, Childhood & Youth Development, (8) Design, Arts & Crafts, (9) Agriculture, Fishing and Forestry. The basic vocational programs are related to 172 trades among which one can choose a journeyman certificate. This certificate can be earned after studying technical and vocational education for two years at the upper secondary level and having two years of practice as an apprentice in the work life (LK06, 2006).

To offer education and training within such large number of trades that use different types of technology is a great challenge. It requires high competence from teachers at the schools as well as from the instructors in the work-life. Some technologies, as for example within ICT, can be common and applicable to all occupations and, perhaps, to society in general. It might be easier, then, to formulate questions about the specific use of this technology than about job specific technologies within each occupation. Therefore, the purpose of this study is to investigate certain applications of ICT. Since the area of new technologies can only be related to the respondents' perceptions of changes in technologies, it was decided to carry out a study based on a survey with VET teachers as respondents. As the total population of VET teachers in Norway is around six thousand

(SSB 2013), it would be very costly to base the data collection on such a high number of respondents. Thus, due to resource limitations and lack of appropriate channels, the researchers decided to collect data from a sample of VET teachers.

Type of research and data collection instrument

This was a survey research that collected self-report data from the participants in the study. It focused on collaboration with the working life and the use of technology in vocational programs in the spring of 2013. The survey consisted of 33 main questions and 52 sub questions, which altogether amounted to 85 questions. Most questions were closed and constructed as a 7-point Likert-type scale. There were a few open questions, which allowed the respondents to give detailed information. It took approximately 30 minutes to answer the questions. The reason for so many questions is the fact that the survey addresses three areas at once. It focuses, first of all, on ICT as the main area, next is the new technology and, as third point, it addresses the cooperation between schools and working life. As one of the intentions was to make comparisons between the three areas, it was necessary to have a large enough sample size. In the three areas, the questions focused on “Interest in”, “Time spent on”, “Challenges with”, “Allegations on” and “Use of”. In addition, data were also gathered about the respondents’ background, such as education, experience as a teacher and practitioner, gender, and some other variables.

Validation of the instrument

The instrument used in the survey was validated through its application to a group of 25 students attending the master degree program in TVET Teacher Education at HIOA. The actual survey was carried out with a group of current TVET (Technical Vocational Education and Training) teacher students. There were about 120 potential respondents who were asked to spread the investigation via their channels. The survey was completed and returned by 95 respondents. As not all participants chose to answer all the questions, the number of respondents may differ slightly from question to question. The researchers hoped to receive a higher number of responses in order to increase the reliability of the results and be able to draw conclusions that reflected the opinions of TVET teachers as a whole. As the responses were spread out on eight of the nine programmes, some of them had very few respondents. Therefore, in spite of a considerable variation in the use of technology in the various occupations, no analyses were made about the individual programmes (Janssen & Stoyanov 2012; NOU 2008, 2013). However, we are quite confident that this survey might provide relevant information and stimulate the curiosity, and interest, for further studies.

Results

Demographics

The survey was carried out among 95 teachers. The group consisted of 31 women, 62 men and two other people who did not inform their gender. Table 1 presents the number of years that the teachers worked in their trade prior to starting as TVET teachers and the number of years as a teacher.

Respondents' type of practice	Respondents' years of practice			
	< 2 (n)	2 – 5 (n)	5 -10 (n)	> 10 (n)
Practice in the trade	4	7	25	59
Practice as teachers	9	33	30	23

Table 1: Years of practice in the trade and as teachers

The distribution of respondents among the nine programme areas appears in Table 2.

TVET Program	Number of respondents
Building & Construction	24
Design, Arts & Crafts	5
Electricity & Electronics	11
Healthcare, Childhood & Youth Development	12
Media & Communication	5
Agriculture, Fishing and Forestry	0
Restaurant & Food processing	2
Service & Communication	8
Technical & Industrial production	20
Not answered	8
Total	95

Table 2: Distribution of respondents according to each programme area

Uses of programmes

Table 3 presents the results to questions about the type and frequency that the teachers use each type of application. As it is shown, the program they use most often is e-mail. Mail is the typical communication program and it is natural to assume that it is used for

communication in school and with the outside world. Based on my own experiences with the schools and the teachers, I assume that most of the communication with the pupils in terms of learning and the practical activities is also taking place within the Learning Management System (LMS), which is used quite often.

As indicated in Table 3, the teachers use SMS quite often to communicate with pupils. From what I've heard, they feel that they have increased communication with pupils in this media and use it for short messages and reminders.

We can see that MMS is not used very often. Such limited use of MMS seems strange as it is often spoken about alternative documentation methods in the TVET area through a greater use of audio and images. This is also confirmed by the fact that they do not seem to use other forms of documentation of this type significantly. Alternative forms of documentation do not seem to have received support through the use of image, video or audio applications, or in terms of typical web 2.0 solutions. The exception might be Facebook that some teachers seem to use often. The exception may also be Wikipedia and YouTube, but the question then is how they use it. Are they consumers or producers? This question is an issue in the report Barriers to digital value creation (NOU, 2013)

When it comes to digital tools and content used in the trades and described as digital literacy in the subject-specific curricula, such as drawing tools, spread sheets or other applications from separate discipline, it is not something that appears to be on the TVET teachers' agenda, and they are used less frequently.

Concerning writing and presentation tools, they are used more frequently. This is a similar result to findings from research carried out elsewhere. Teachers tend to use ICT as a typewriter, as a search machine and for communication purposes. ICT is thus used in a lesser degree to stimulate higher level thinking and reasoning and for allowing learners to construct their own knowledge (Tezci, 2011; Wikan & Molster, 2011).

<i>How often do you use this type of program in teaching? (Answer in % of respondents)</i>	<i>Daily</i>	<i>Every other day</i>	<i>Weekly</i>	<i>Monthly</i>	<i>Semi-annual</i>	<i>Less frequently</i>	<i>Not in use</i>
<i>Email</i>	84	5	6	1	1	2	0
<i>SMS</i>	40	16	24	10	3	5	2
<i>MSM</i>	2	4	11	10	5	18	49
<i>Twitter</i>	2	2	0	2	1	7	86
<i>Facebook</i>	10	9	15	7	2	4	53
<i>Skype</i>	2	1	12	6	6	5	67
<i>Blog</i>	2	1	4	4	5	9	74
<i>Wikipedia</i>	7	6	34	26	5	5	16
<i>Chatting</i>	2	1	8	4	3	3	78
<i>Game</i>	1	2	5	6	6	7	71
<i>E-books</i>	2	4	9	13	11	10	52
<i>Word Processing</i>	54	12	27	2	1	1	3
<i>Presentation tool</i>	26	19	38	10	3	1	3
<i>Spread sheets</i>	11	8	19	28	8	10	17
<i>Drawing program</i>	8	7	30	18	10	7	22
<i>Podcast/Webcast</i>	1	0	4	1	4	6	83
<i>YouTube or similar</i>	8	12	23	27	8	3	20
<i>Flicker or similar</i>	4	4	13	9	2	9	60
<i>Music Services</i>	2	4	10	10	3	9	62
<i>LMS</i>	73	10	10	2	0	1	4
<i>NDLA</i>	12	7	18	23	7	5	27
<i>Industry Related training programs</i>	4	11	20	17	13	10	26
<i>Industry Related Content</i>	14	11	36	15	8	4	11
<i>Google or similar</i>	51	23	18	5	0	0	2

Table 3: How often do you use this type of program in education?

Technological development

When asked about the technological developments in their own trade, as shown in Table 4, the teachers indicated that new technology is constantly being used in the trade. When asked how they looked at the changes in the last five years, they generally agreed that there have been changes, although a few more teachers agreed less here. When it comes to changes in the last year, the opinions turn in the direction of even less agreement as compared to the previous questions. A possible explanation is that one does not see it easily when standing inside a situation.

It is interesting to notice that a higher percentage of teachers (22%) indicated to believe that their occupations will change significantly in the next five years due to new

technologies, while an even higher percentage (42%) expressed the opinion that the principles of the occupations will remain the same.

One can wonder about the reason for such opinion. A question to be asked is whether it depends on the type of occupation. Perhaps it depends also on what is the base for the teachers' understanding of their occupation's principles. Quite likely it will depend on both.

In the field of Electricity, for example, current, voltage and resistance, and calculations about it that apply Ohm's law remain unchanged. However, a drilling robot for attaching cables will change the way the task is performed. In addition, there might be others who will take care of laying cables in the future. Within the occupation of health and social care, the human factors such as heart rate, blood pressure, humanity, etc. will remain the same, but the type of technology used within health and welfare might affect the way the work is performed.(st.mld, 2012)

As we have seen in previous examples changes in the working life can lead to major changes in occupational practice. Although one cannot say that there will be so drastic upheavals in all occupational areas.

An interesting question to continue working on is "how do insights about the changes occurring due to technology affect the work of teachers in the classroom every day?" Should the teacher's work still be guided by the good old principles, or, perhaps, are the new technologies that must take precedence in forming the basis of the content?

Respondents' opinions about	Not True (%)	(%)	(%)	(%)	(%)	(%)	True (%)
There is constantly new technology being used in my occupation	14	9	3	13	19	19	23
My occupation has changed significantly over the last 5 years	14	6	10	17	19	16	17
My occupation has changed significantly over the last year	22	16	12	17	12	16	5
My occupation will change significantly over the next 5 years	9	6	6	13	26	18	22
The basic principles of my occupation remain the same	3	2	4	9	13	26	42

Table 4: Teachers' opinions about Technology changes in their occupations

As we see in Table 3, it appears that there is not great focus on using Industry related training programs (learning assets) or content each day, and the use is limited to weekly, while a significant part do not use training programs at all.

This could be attributed to the fact that there does not exist any training programs at all. When asked this question, 38 respondents replied that there were training programs, while 25 answered that they did not exist, and the others did not know. With regard to whether they knew if the trade had its own resource pages, it was found that this was something they knew better. 69 respondents answered yes, 10 answered no and the rest did not know.

At the same time as shown in Table 5, it appears that the content of school life, seen from a digital perspective, is not as trade related or connected to the trades as intended. They spend little time on trade-related learning programs and software. It looks like they use some more time in the trade resource pages and thereby they have a little more focus, which is also confirmed by the other indicators.

Amount of time spent on trade Related:	Little (%)	(%)	(%)	(%)	(%)	(%)	Much (%)
Sites in the teaching, the week before	22	20	11	13	15	12	7
Digital learning assets, the week before	31	16	15	12	12	9	6
Software, the week before	35	14	11	11	14	12	5

Table 5: Amount of time spent on trade related

Conclusions

This paper has focused on the major technological changes in the last decade. This has led to major changes in the workplace and many jobs have been substantially altered. This has also had influence on education both in content because the occupation is changing but also because you get other utilities.

Based on the responses in the survey, it seems that TVET teachers are, in a limited extent, using digital technologies. Digital competences have multiple dependency factors as previously described. In this study, it has not been intended to measure the individual's digital expertise, but rather how they apply it. Questions to be asked refer to the relevance of digital skills for TVET teachers. Can they perform their work with a lack of digital skills?

Or, is it because these teachers do not regard the applications as necessary in their occupations?

We have also looked at the use of new technology into vocational practice. New technology includes more than electronic or ICT based. And respondents have rarely been given the opportunity to express how they incorporate other elements of technology into education. But it remains a paradox that they choose not to use digital technology to create a stronger link between what is done in their trade and in school.

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Secondary teacher education

Critical Thinking and Intercultural Communication – Responses in Secondary School Textbooks to Curricula Changes

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Abstract: Curriculums and textbooks, together with acts and regulations, most often constitute the daily framework for all stakeholders and partakers in education. First of August 2013, a revised National Curriculum for Social Studies became operational in Norway. This paper identifies and explores the changes that were introduced through this curriculum change. A reflection on textbooks in the era of digital information is introduced. Results from a preliminary exploration of textbooks published as a response to the new curriculum are shared and discussed.

Keywords: curriculum textbooks, critical thinking

Introduction

Over the last fifty years, changes in national curricula in Norway have occurred approximately every tenth year. The national level of politics decides how and when a change is called for, and the Norwegian Directorate of Education (NDE) is responsible for the development of the new or revised curricula. Most often the changes respond to international trends in teaching and learning, or to shifts in society that call for well prepared and structural shifts in the educational system. In 1994 public upper secondary schools (grade 10-12) became a right for all 16 year old. In 1997 the school starting age was shifted from seven till six, and the compulsory education grew from nine till ten years. These structural changes of secondary school education called for new approaches to learning processes. Norway joined the European trend shifting focus from knowledge to skills and competences. 2006 saw educational reform of competences being realized through a new national curriculum for primary and secondary schools. The recent changes are related to changes in the individual subject curricula, and mostly related to methods of work.

Background for Investigation 1 – revised Curriculum in Social Studies

First of August 2013 a new National Curriculum in Social Studies came into practice in Norway. The curriculum covers primary education (1-7), lower secondary school (8-10) and the compulsory subject social studies in upper secondary school. The curriculum identifies what competences the pupils are supposed to develop after grade four, seven, ten and in secondary school. Up till tenth grade social studies includes history, geography and social science based subjects. The Social Studies Curriculum for upper secondary

school focus on the social science based subject, and separate curricula are developed for the compulsory subjects history and geography. Pupils preparing for academic studies are working with Social Studies in their first year, whereas pupils in vocational programs work with Social studies in their second year. The changes in the curriculum introduce only minor changes in the core competences and are presented in the table below. This study is focusing if and how the curriculum changes is detailed and responded to for the upper secondary level of education. Approximately seventy percent of Norwegian youth enter and complete secondary school. How and what they develop of competence in social studies at this level, will for many represent their final collective and formal interaction with social studies.

2006 Curriculum Social Studies	2013 Curriculum Social Studies
The Individual and Society Seven sub-competences	<i>The Explorer/Social Science methods</i> <i>Five sub-competences</i>
Work and Business Life Eight sub-competences	<i>The Individual, Society and Culture</i> Eight sub-competences
Politics and Democracy Six sub-competences	Work and Business Life Seven sub-competences
Culture Five sub-competences	Politics and democracy Nine sub-competences
International affairs Nine sub-competences	International Affairs Six sub-competences

Five core areas of competences are identified for both curricula. Three out of five titles are identical in the two versions; pupils are to develop competences related to Politics and Democracy, Work and Business Life and International Affairs. No substantial shifts are made in the composition of their sub competences, but private economy and consumers rights are given more attention in the 2013 curriculum than in previous editions. Personal and political economy are connected with reference to the pupils shifting stages of life. Two previously separate core areas of competences are merged, in the new core the Individual, Society and Culture. This integration invite more complex investigations of socialization and what role dominant and minority cultures play in such processes. It is possible to interpret this change as a response to an increasing recognition of Norway as an increasingly more ethnically and culturally diverse society.

Culture is no longer a competence in its own, but merged with the competences of socialization and societal structures. According to NDE, the merge is a deliberate move for pupils to construct a more intimate understanding of the interrelation between socialization, structure of society and dominant cultures and subcultures. Integrating concepts and theories of culture also in the three other cores of competences open for a more thorough understanding of culture; perspectives and social practices influence all

spheres of society. Awareness of this potentially develops a knowledge-based respect for diversity, creates new questions and thus opens for unforeseen insights.

A new fifth core competence is introduced; Social Scientific Methods. Pupils on all levels are supposed to be introduced to and to develop social scientific methods as a separate area of competence. Five sub competences in social scientific methods are identified, and to be implemented as consistent methods of work in all other competences. Emphasis is thus not placed on what to learn, but how to learn and how to develop knowledge. Pupils are supposed to develop knowledge of and insight in selected aspects of society, but also understand how that knowledge was constructed as well as what choices and perspectives are represented. Through developing such insight in the relations between theory - ideology - and selected data for a study, pupils will be prepared to evaluate their surroundings and potentially identify use and misuse of stereotypes or dogmatic knowledge.

Background for Investigation 2 – New text books

Secondary school pupils in Norway have access to free text books. This secures that no pupil should be without access to the learning material his or her school has decided as best or most relevant for the subjects taught. Approximately 90% of young people attend secondary school. As a compulsory subject for all pupils, the choice of social studies textbooks is important. The textbooks are selected by the school owners, for secondary schools, the County level of politics and administration. New text books accompanied the changes in the curriculum autumn 2013. August 2013 one out of two new entries to the book marked was released; Fokus²⁰, a third edition of a book that had its first edition developed to meet the challenges of the Curriculum of 2006. This Curriculum introduced, like most European national Curricula at that time, competences and skills as the carrying identifications for all subjects. The second book, Delta²¹, was released in September 2013. This textbook is a first edition, deliberately developed to meet the requirements of the fresh Curriculum. At the time of writing, the author only had access to the first text book. This situation opened for a *sub-investigation of change*. What changes can be traced through three editions, and how does the authors and the third revision respond to challenges from the new curriculum?

Why investigate textbooks in a digital time? And – what is included in the term textbook.

There are several debates about the format and role of textbooks. One contemporary debate is questioning the need of paper editions of textbooks when they can be substituted with *online editions*. Digital versions of textbooks save trees are transportable and can easily be updated and revised. Resources are saved. This debate sees digital

²⁰ Haraldsen, M., (2013) Fokus, Oslo, Aschehoug Forlag

²¹ Holgersen, T.S., Iversen, M. and Kosberg, E., (2013) Oslo, Cappelen Damm

versions of text books as shift in modality, but do not necessarily question how textbooks are written and used in schools. From this perspective is possible to argue that digitalized textbooks are positive both from an environmental and a democratic perspective.

Another debate is related to *the role of text books in a digital time*, and related to that *shifting the textbook with online learnings resources*. In this debate the idea of a communal textbook is left, and substituted by clusters of different online resources. In Norway a National Digital Learning Arena (NDLA) was established in 2007 after initiative from two County Councils. NDLA is an open access resource, financed and organized by 17 out of 18 county councils in Norway²². The counties are responsible for secondary school education, and from 2007 also responsible to secure free learning resources for their pupils. This initiated the idea of a collectively financed online learning resource, structured to match the subject curricula in secondary schools. (<http://ndla.no/nb/node/36>)

The establishment of an open access and publicly financed online learning resource triggered a multifaceted debate. NDLA is developed and continuously updated and revised through an editorial group on behalf of the public school owners of secondary schools, the Counties.²³ From the perspectives of publishing companies, such free learning resources disfavor the private sector, and change the rules in a competitive text book market. Outside an established democracy, or even within, it has also been questioned whether a government based learning resource for education would secure representations of critical entries. The Publishing Companies brought the case of free access and its effects to deregulate the markets to ESA²⁴, but the ESA ruled that the government was in their full right to develop such material and make it publicly available.²⁵ The Norwegian Association of Graduate Teachers raised class based questions. They pointed to established knowledge of the interrelation between educational and economic background of parents and children's performance at school. Combining this knowledge with similar parental structural differences in digital competence, they claimed that pupils from families with low scores here would suffer severely from not having access to the structured knowledge of a physical text book.²⁶ They opinioned strongly the need for both,

²² Oslo has never been a member of the collaboration.

²³ <http://om.ndla.no/node/417>

²⁴ EFTA Surveillance Authority

²⁵ Press release from ESA: <http://www.eftasurv.int/press--publications/press-releases/state-aid/nr/1535>

²⁶ Press release Norsk lektorlag/ass of Secondary School Teachers

<http://www.norsklektorlag.no/nyhetsarkiv-2009/elever-trenger-laereboeker-og-digitale-laeremidler-article264-197.html>

and added to the argument that in most families textbooks are the only factual books in the home, and that it is independent on the technical infrastructure of the family.²⁷

Digital versions of paper text books

All pupils in secondary schools in Norway have access to a PC, 94% of all families have internet connections in their homes. This opens for a brief comment on paper editions of books versus digital versions. Most often digital versions of a book represent a plain shift in modality. The paper version of a text is supplemented with or shifted into a digital edition of the straight forward text. Both the lowered costs of distribution and the reduced use of natural resources, make digitalized books a sympathetic solution both to share and access scientific and academic knowledge. If internet access is available, distribution of knowledge no longer reflects the geographic location of the producer or the consumer. In the early stages of digitalized books, effect on eyes represented an argument for keeping to the text books. Recent development of reading tablets, have overcome some of these challenges, but since many of the pupils are dependent on the School PC this might be relevant in the process of decision-making.

A more dramatic understanding of the term digital books/knowledge is represented by Robert Darnton (2010). In his article on old books and e-books he elaborates the democratic aspects of the digital knowledge with particular emphasis on how a truly digitalized text (book) can represent structured layers of knowledge. In his example, a dramatized story illegal book distribution in Europe in the medieval period is hyperlinked with structured treasures of knowledge. Treasures that can be accessed through different keys, purchased or achieved through other systems. The digital book in Darnton's perspective is something new and different, as he's digitalized book utilize the potential of text and hypertext in combination. As argued by the Secondary School Teachers Association above, the potential to make use of such deep data based is likely to be unequal, and this text will not follow his idea. We will now turn to the two school books investigated

Fokus – editions 2006 2009 2013

The text below present and comment some aspects of a systematic study undertaken Summer/Autumn 2013 of three editions of a textbook in social studies. The three editions were systematically studied to identify their initial and changing response to two questions:

1. *Critical thinking*. How do structure and content of the books contribute to develop individual and collective competences to identify, explore and evaluate
 - a. desirable and undesirable situations in society

²⁷ As from 2007, all secondary school pupils have had access to a «free» computer. It could be leased at a low cost for three years and then kept, or it could be loaned and handed back when the pupil left school or completed his or her exams.

- b. shifting perspectives, open and hidden messages and academic quality of a text
2. *Intercultural communication*. How do the content and structure of the books contribute to develop the pupils' competence to listen and to shift perspectives in academic dialogues and social communication?

Method of investigation

As an artifact any book is a dead collection of letters, figures and colors till it is opened and a reader interacts with its contents. The authors have structured the components of letters into words, words into sentences figures into numbers, numbers to statistics and visuals into carriers of meaning. This universe of intentional meaning confronts the body of individual pupils, and also their teachers. How the teachers interact with the universe of the textbook is crucial for how most of the pupils will open the book and interact with its messages. At the point of writing, my interrogations have not included interviews with lectures and pupils, inviting them to explore and share perceptions and experiences with the textbooks. The empirical basis for the text is restricted to sub-studies of the books related to how the three have changed. The authors remain the same for the three books, whereas the picture editor is new in the 2013 edition. All three books have online supplements, separate for teachers and pupils. These are not brought into the analysis as few secondary schools have bought access to those pages. The 2013 edition will include a "short free access online resource" to the pupils. A more in depth online resource is available at a price. Also the teachers' online resource is a pay-product. At the time of the presentation those pages were not fully developed.

Introduction

All three books have prefaces where the authors present their ambitions not only for the books, but also for the students. In the two first editions the authors communicate directly with the anonymous pupil. He or she is talked to as "you", and the authors refer to themselves as "we". In the third edition of the book a noticeable shift has taken place. The authors concentrate on sharing structure and ambitions of the text to an unidentified reader. In this early pages of the books, comparative readings aiming to identify signals of change notice even smaller shifts. The last edition presents and comments on challenges related to the subject matter, social studies and society. It is possible to interpret this shift, as a clear and deliberate signal of a different way to communicate and connect with the reader. The reader is recognized as an active student or learner who will interact with the book to learn. Even if some sentences from previous editions remain and thus involve the personified "you", few intimating sentences are left where the anonymous pupil is talked to. Some pupils might find the attempt to connect through the anonymous "you" inclusive, others find it patronizing and make that as a reason to rebel against the book. A

short conversation with the editor of the book²⁸ confirmed that the shift of language was deliberate. The conversation also identified some of the challenges of revisions. Sentences and paragraphs might be overseen and left in their old dress, shifting perspectives might have unidentified traces in unexpected parts of the book.

Body of text – titles – subtitles and text

The body of text is organized in four sections in all three books. Minor adjustments are introduced in the second edition, whereas the third editions include some more substantial alterations in response to the new curriculum. A more detailed study of the third section of the book, devoted to Work and Economy, unveils new combinations and small shifts in titles, subtitles and content. The shifts, even if small have opened for a different read by the individual pupil. An example can be a chapter title that was kept through the first two editions as: *Almost Adult – Personal economy*. In the 2013 edition this chapter is altered to *Almost Adult – Personal economy and Consumer ethics*. We identify similar changes in a second chapter. Here the title *Wages as deserved* (first two editions) are altered to *Wages, Standard of living and Standard of life*. A third example of shifts in titles is represented by *What causes different wages* (first two editions) to *What is fair wages?*

The changes in the titles and the subtitles have not opened for major alterations in the main body of text. As thought provokers or teasers they do, however, invite more and different questions in the mind of the reader. Questions of ethics are present in both the first changes, and a request for explanations are exchanged with a request for multiple perspective analysis in the second. In the subsections dealing with the pupils' personal economy, we can trace more examples from the pupils every day challenges already in the second edition of the book. The 2009 edition does i.e. add sections with tax rules relevant part time work that pupils are likely to be involved in. The cost of not paying bills, misuse of credit card and consumer rights are exemplified and discussed and is likely to represent both useful knowledge and insight in consequences of irresponsible behavior.

Subtitles as *What is fair wages?*, open for identification and discussions of ethical challenges in a globalized economy. The body of text is, however, most often more descriptive than analytical. Descriptive text formats have a tendency to direct the reader to read and learn, rather than to initiate a dialogue with the text, questioning its perspectives, empirical basis, or its relation to and consequences for real life.

The third edition has relocated some of the subtitles and subsequent texts from the way they were organized in the first editions. If the book is meant to be read from the first to the last pages, these seem like wise alterations. Texts read in shifting sequences do open for different questions being asked, and even descriptive texts can initiate questions if

²⁸ Telephone conversation August 13th 2013.

sequenced to do so. As the book is dominated by a descriptive discourse, it is hard to identify a continuous invitation to and presence of a questioning approach.

Pictures – what purpose do they serve?

In his book *Didactics of History*, Erik Lund (2011) devotes thirty pages to examples of illustrations. Both for the author and the reader, they serve as an analytical basis to introduce and discuss pictures as scientific and educational sources of information and empirical evidence. One of Lund's main points is that for visual inputs to serve their potential, their interpreters need analytical skills and knowledge to identify potential and limitations of the individual images. All three editions of *Fokus* are supplied with photographic illustrations. The first edition has a total of 99 photos, editions two and three have 109 and 110. With dominant presence, it becomes important to ask why the pictures are selected and what use pupils and teachers can make of them. Is it possible to identify what intentions the individual picture is meant to serve? Can we identify alterations or shifts in the body of pictures in new editions? If so, what do these shifts express, a deliberate intention to make the photos part of the text or a modernization of lay out? In the two first editions the authors states that the function of the pictures is to elaborate and expand the text. This was left out in the third edition, but according to a conversation with the editor, this is due to a slip of the pen. As readers we are free to expect academic learning from the photos.

The three textbook responds to two different curricula, both explicitly states that pupils should develop academically healthy and critically interaction with sources through their studies. The photos that are used in the books originated in time and place and were captured by a person for a reason. All editions contain the minimum of formal copyright information. Key information about the picture is generally nonexistent. When was it taken? What was the role of the photographer? Where was the photographer located in relation to the picture? Not sharing this type of information makes it difficult to use the photo to develop deeper, analytical and empirical relations to the photos. Not introducing and utilizing the precise and deliberate contribution a photo can add to the text reduce the value of photos as contributors to contextual interpretation of more general situations or concepts discussed in the text. Imprecise uses of photos in books might also make them counterproductive examples for the pupils. Photos become mere illustrations to break the monotony of the text. The revised social studies curriculum requires research methods to be applied as a working method throughout the curriculum. Both pupils and teachers could expect formal requirements from social science methods to be met in textbooks produced to meet the standards of the curriculum.

Gender and ethnic representation in the photos are used as examples of the picture analyses of the text books. Neither the number of representations nor their context conveyed any surprising information. Precise information was rarely connected to the picture; connections between text and pictures or connections between pictures in

different sections of the texts are rarely drawn. As mentioned above, the 2013 edition had a new editor and was revised to respond to the 2013 curriculum. The 110 pictures do not include information about the pictures' who, where and when. Seventy five pictures are of people, fifty three of whites and twenty two of non-whites. Out of the twenty two photos of non-whites fourteen are connecting non-whites with poverty, war, fights for democratic freedom. Three are connecting non-whites with formal power. As part of the investigation, copy right information for the individual picture was used to track background information of pictures that had been selected for the books. This proved to be both a time consuming and sometimes unrewarding exercise. The second last picture of the 2013 edition was identified. The textbook included the following comment and information about the picture: NTB/Scanpics pages do supply the pictures with precise information:

Picture ID	syf26297
Title	China electric vehicle
Caption	epa03461226 Electric passenger cars are shown to a visiting group of journalists at the Electric Vehicle development center of the Beijing Automotive Group south of Beijing, China, 07 November 2012. The company established the center with the support of Beijing city government with the aim of boosting development of electric vehicles with a range from taxis to buses adopting electric and hybrid electric power systems. EPA/ADRIAN BRADSHAW Date: 2012-11-07 Archived: 2012-11-07 8:14:31

It is hard to believe that this information would not have contributed, not only to the information value of the picture, but also opened up for a multifaceted and analytical discussion of the content of the written text.

Tables and figures are used to present and explain various aspects of society. When the individual develops an understanding of how tables and figures are constructed and can be interpreted is as well as misinterpreted, life skills are increased. Skills and competences to construct study and interpret figures and tables constitute a major part of social studies. It is unfortunate to have to state that tables and figures generally follow the same pattern as the photos described above. All three editions have representation of tables. Some seems to be used as mere illustrations; others are given a general reference to the original source. Precise references combined with sharp questions are rare.

Challenges and questions

All chapters are summarized and present challenges and questions as an outreach to the pupils work. What function this question- sequence in textbooks should serve is frequently raised and discussed as part of textbook analysis. (Børhaug, 2012, Lund, 2011) *Exercises for knowledge-check*, asking the pupils to identify the sequences in the texts that present the response, are present in all editions and all chapters. *Innovative questions* are gives

some space, but have a tendency to take a general rather than a precise form. Such general and imprecise questions open for an equally imprecise response from the pupils. The way both sets of questions are presented and present in the textbooks lack a form and a format that direct social science skills and/or perspectives for understanding to be developed. The most challenging questions might have such a potential, as they make identification and use of sources and events external to the textbooks as part of the pupils challenge. From a pupils perspective this might develop their capacity to apply the ideas and knowledge from the textbooks to real life situations.

The curriculums call for social studies to develop explorative pupils by the means of social science methods. The 2013 edition of *Fokus* respond to this through including a new explorative activity at the end of each section of the book. It could take the form of two short entries representing different perspectives in a case. The students are then invited to explore, explain and discuss. Few direct bridges are made to connect different sections of the material in the book with each other and the explorative challenge.

Summary of findings

Exploring new curricula and accompanying textbooks is a rewarding exercise. It activates critical thinking and its relation to learning activities and the purpose of learning. The intentions of the new national curriculum for Social Studies in Norway are ambitious. To strengthen the idea and practice of democracy it is important and relevant to devote more resources to explore and understand the meaning and consequences of a majority and a minority perspective, and how a situation changes with a changing perspective. It is also highly important to develop necessary critical skills to separate valid knowledge from rumors and stereotypes. Globalization of all aspects of life make such competences an important part of life skills.

Intimate readings of the three editions do not convince this author that the intentions and challenges from the new curriculum are taken properly care of by the 2013 edition of the textbook. Some of this can be connected to the challenges of revision. A brief look into the freshly written textbook DELTA, might indicate this. In a revision the "old" text can block new perspectives from being developed. Focus is on what can be kept and what need to be shifted. A fresh book develops without ties from the old manuscript, and does thus potentially represent both a free and contemporary response to the curriculum. Academic and professional backgrounds of the authors also contribute to the format of a textbook. Both aspects will be part of the next stage of work: comparing DELTA and FOKUS.

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Education for Freedom in a Pluralistic Society

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Abstract: This article points out *freedom* as an educationally desirable and preferred value and *diversity* as a dimension of practice that are likely to promote or hinder freedom. Its research question is: *How can freedom be promoted in a society marked by diversity?* The text presents and discusses contributions from two educational philosophers: Otto Friedrich Bollnow and Gert Biesta, and from two researchers within the field of religious education: Robert Jackson and John Hull. The article concludes that diversity in curriculum, which reflects the diversity in society, can promote freedom by giving opportunity to respond on thoughts and practices that challenge thinking and behaving in new ways. Experiences of freedom can come unexpectedly in moments where pupils make decisions with significance for their future life, but can also be promoted through processes where pupils get the opportunity to discover and discuss diversity in curriculum and in society.

Keywords: Freedom, plurality, diversity

Introduction

There is a paradox in education regarding freedom. This paradox and its challenge to teachers was precisely formulated by the philosopher Immanuel Kant in his “On Freedom” from 1703: *One of the greatest problems of education is how to unite submission to the necessary restraint with the child’s capability of exercising his freewill. ... I am to accustom my pupil to endure a restraint of his freedom, and at the same time I am to guide him to use his freedom aright* (Kant 1703/2003: 27). Teachers who want their pupils to achieve more independence during education know better than the pupils what it takes to get there. They also know that freedom does not grow proportionate to independence in a pluralistic society where interactions between different individuals and groups require that children and youths as well as adults are able to respect and take care of each other. In order to let pupils develop freedom in more senses of the word than they can overlook, the teachers teach them more than they would ask for, if they were given the freedom to choose. They guide pupils through learning programs designed for the appropriation of knowledge, skills and attitudes that are required to participate in social life, and their use of textbooks and exercises restricts the freedom of the pupils temporarily with the intention of letting it grow gradually through the educational process.

Freedom is a distinctive feature of human life. While animals are bound to follow instincts, human beings have the capacity of self-reflection, moral judgment and free decision based on conscious reasons. These capacities are strengthened through education. More knowledge about society with its many aspects can make schoolchildren and students realize that different people can take different issues into consideration in their reflections, judgments and decisions. And more insight into society’s growing diversity can

make pupils understand and appreciate freedom of opinion and expression. But such effects of education cannot be taken for granted; they depend on the understanding of freedom, diversity and education.

Values are emphasized in the aims for educations, especially in principal aims. Biesta (2011) stresses the importance of values for educational improvement, also in research. He recommends such educational research to 1) start with value judgments of what is educationally desirable, 2) feed preferred values into research, 3) investigate dimensions of practice that are likely to promote or hinder these values, and 4) feed from research back into practice in order to support change for improvement (Biesta 2011: 209).

This article points out *freedom* as an educationally desirable and preferred value and *diversity* as a dimension of practice that are likely to promote or hinder freedom. Its research question is: *How can freedom be promoted in a society marked by diversity?* Answers to this question in Bolnow's, Biestas'; Jackson's and Hull's philosophies of education are presented and discussed.

Freedom and Diversity in Bollnow's Philosophy of Education

Philosopher Otto Friedrich Bollnow classifies philosophy of education in four main directions that represent different understandings of what education deals with essentially (Bollnow 1986: 252).

Firstly, education is understood as *producing*, as making something out of a material. The school system is regarded as a parallel to industry, with the teachers as its factory workers and the pupils as its material. This is a technological view of education. The goals of the production, i.e. the desired results of education are new workers to execute what is needed in society. Pupils are expected to live up to given standards, and the influence of the teachers' is expected to make them do so (Bollnow 1986: 243 f., 252).

Secondly, is education understood as *allowing to grow*. This is an organic view of education that in central respects stands for the opposite of the first understanding. The school as regarded as a parallel to nature, to a garden where the teacher acts like a gardener, supporting the pupils with the environment they need for their growth and development. Each individual's potential becomes unfolded through the educational process, and the teachers influence is not decisive for the result (Bollnow 1986: 244 f., 252).

Thirdly, education is understood as *civilization* according to Bollnow, in the sense of a process where children and young people are civilized through receiving information of cultural traditions, and through learning to live and behave according to traditional standards. They may play an active role in interpreting the traditions. A main point in

education understood as civilization is that their knowledge, skills and attitudes are decisively formed by what is transmitted to them (Bollnow 1986: 245 ff., 252).

The fourth variation Bollnow presents is education understood as awakening. In studying literature and working with arts and crafts or other school subjects a pupil can experience an immediate and powerful challenge, a call to change in life. It remains indefinite as to content, and does not tell the person experiencing it how to react. I place upon the person a demand of conscience and a call to responsibility for making decisions for which there is no precedent (Bollnow 1986: 249 ff.).

There are tensions between these directions and main understandings of education. The fourth understanding, education as awakening, emphasizes a conscience which cannot be made by teachers acting like factory workers or craftsmen according to the first understanding. Nor can such a conscience be transmitted through teaching according to the third understanding (Bollnow 1986: 251 f.).

Describing more accurately his own understanding of education, Bollnow does not underestimate the value of teaching, but he stresses that it comes to education only when the individuals are allowed to decide for themselves how to think and what to do. He defines education as: *the intellectual encounter between the generations, or ... between the rising generation and the intellectual-historical world* (Bollnow 1969: 102). The use of "encounter" indicates here that education is not considered as transmission of unaltered content. Bollnow makes this clearer by emphasizing that education is not uncritical reception, and points out: *One must first value, and only then one can understand* (Bollnow 1969: 118). Evaluation is here regarded as the task of pupils and students themselves, and it is placed early in a learning process, before understanding. Bollnow's message is not that children and youth on their own know better than the content in a school syllabus. He does not maintain that they have a firm stand independent of the content in schoolbooks and lessons from where they can judge what is good or bad, correct or incorrect. What he point out in the formulation *one must first value*, is that pupils capacity to think, reflect and criticize have to be engaged in the learning process, in order that their understanding can be their own and adjusted to their conditions. Bollnow also says that education requires criticism towards oneself: *I understand only insofar I place myself in question* (Bollnow 1969: 120). The educational process, as he describes it with criticism directed in both directions, results in an understanding that is dynamic and always requires new reflections and new decisions

Bollnow defines *freedom* as a realisation of the innermost self through decision in accordance with one's own conscience (Bollnow 1969: 109; 1986: 252). He categorizes the possibility for such a decision as positive freedom, and emphasizes that it can never be a finished product. It has to be realized through long and hard effort, and during a process more filled with practicing and learning than with unfolding of natural talent

(Bollnow 1978: 593 ff.). Freedom is realized through active interaction, and seldom through critical interaction with culture.

In this interaction, *diversity* in culture is significant. School children and youth are able to observe that there are irreconcilable contrasts between states, religions and cultures. They apprehend reality both as alien and frightening, and as plurality of possibilities. Being confronted by many options, also the one to create something new, they are challenged to realize their own freedom by taking the risk to decide, daring to take a stand (Bollnow 1969: 109, 112 ff.).

Freedom and Diversity in Biesta's Philosophy of Education

Biesta, like Bollnow, describes different understandings of education and uses them as a basis for discussion of how an under which conditions freedom can be promoted. He connects the understandings to three major functions of education (Biesta 2010: 19 ff.):

Education's first major function is *qualification*. Education provides children, young people and also adults with knowledge which can be useful in a position and is required to get a permanent job. Through education they also get the opportunity to develop skills and attitudes to be used in working situations.

The second major function is *socialization*. Education make people become members of social and cultural groups and fellowships both outside and inside workinglife. Educational institutions have been organized with the intension of transmitting norms and values or continuing cultures and traditions.

Subjectification is according to Biesta education's third major function. Education has an impact on the formation of human qualities such as responsibility and democracy. It can promote the process of becoming a subject, and allow those who are educated to become more autonomous and independent in their thinking and acting.

There is a difference between the alternatives above regarding how they can be understood as consequences or effects of education. Biesta maintains that there is a tension between the latter alternative and the others. This is a clear parallel to tension between the latter alternative in Bollnow's understandings of education and his first three understandings of education. Both Bollnow and Biesta emphasize individual freedom in their last mentioned alternatives. Biesta point out: *The subjectification function might perhaps best be understood as the opposite of the socialization function. It is precisely not about the insertion of "newcomers" into existing orders, but about the ways of being the hint at independence for such orders* (Biesta 2010: 21).

The activity in educational institutions should in Biesta's opinion be arranged with the intention of promoting freedom, and plans for the activity should take into consideration how freedom is related to plurality. He maintains that the educational responsibility today

has to do with “*the creation*” of ... a space of plurality and difference, a space where freedom can appear, and where singular, unique individuals can come into world” (Biesta 2006: 100). This requires the creation of situations in which learners are able and allowed to respond. In plans for education curriculums can be made which consider pupils need for such situations. Most important for the promotion of freedom is not the curriculum as a content that needs to be acquired, but curriculum as a practice that allows for particular responses. The teachers can arrange such practice in their lessons by challenging their students to respond. This can more specifically be done “by confronting them with what and who is other and by posing such fundamental questions as” “What do you think about it?”, “Where do you stand?” and “How will you respond?” (Biesta 2006: 28).

Biesta defines *freedom* as coming into the world as something unique, coming into presence as a subject, and acting, taking initiatives and introducing something new (Biesta 2006: 88.92; 2010: 82). Freedom is here not so much something to have, as something to be. Freedom exists in action, and plurality is an important condition for freedom’s existence in action. Biesta emphasizes that freedom exists in public, in a space of plurality and difference (Biesta 2006: 86.88.92 f.). The concept “difference” is used deliberately by Biesta in addition to “plurality” to describe a high extent of otherness. While “plurality” in its basic sense indicates more numbers, which can be more numbers of the same issue, “diversity” clearly expresses otherness. “Difference” additionally expresses a high grade of otherness. Biesta points out these nuances when he describes how an individual can be challenged to freedom in the sense of coming into presence as a subject and as something unique. While “diversity” can denote variations against an identical background, and variations of a universal human nature, “difference” clearly signifies the presence of otherness. Within education this means that children and young people do not need to understand otherness and difference before they can adequately engage, and that knowing another person is not a condition for engaging with him (Biesta 2006: 102 f.). This indicates that a high extent of variation and otherness in a school’s curriculum can challenge pupils and students to respond to what is different and through this realize their own freedom.

Freedom and diversity in the educational process

The paradox in education regarding freedom, which was described in the introduction of this article, is still present in Bollnow’s and Biesta’s philosophies of education. They both emphasize that in education children and young people experience challenges in encountering a reality marked by diversity, and that their freedom can be promoted through this. Bollnow underlines the epistemological aspect of this challenge, while Biesta maintains that responsibility is more appropriate than knowledge, and that ethics is more important than epistemology (Biesta 2005: 55. 64). Still they both accept that in educational institutions there is a curriculum made by authorities and presented to pupils

and students. Their freedom is restricted by the fact that they have to respond to the curriculum. Freedom is at the same time preserved through the possibilities to choose how to respond. And freedom can be promoted when they are given the possibility to encounter contents and persons with a high extent of otherness which challenge them to make their own decisions (Bollnow) and come into presence as a subject (Biesta).

The two philosophies of education presented above have their strength in describing clearly and precisely how freedom can be understood and how plurality, diversity and difference in curriculum can contribute to promoting freedom for children and young people. A common weakness is a lack of process in their descriptions. According to Bollnow's philosophy, encounters seem to happen in moments which can surely have decisive significance for pupils' life in the future. And it's easy to follow his reasons for why teachers cannot plan their lessons in a way that decides how and when the pupils can experience decisive moments. Biesta recommends in the curriculum a practice that allows for particular responses, but does not give a more detailed description. Two philosophers of religious education have gone further into this in a way that can also contribute to philosophy of education in general.

Jackson presents an interpretative approach to religious and cultural content in education. Like Bollnow and Biesta he emphasizes diversity. Firstly, according to this approach the teacher does not present religious, cultural or other kinds of content as homogenous. Secondly, children and young people are not requested to set aside their own opinions, but instead let them be compared with others. And thirdly pupils and students are encouraged to reassess former opinion through constructive and critical work with the curriculum (Jackson 2009: 21 ff.).

Hull presents what he calls a gift-approach to education. His point is that a planned process can give the pupils the opportunity to both discover and discuss diversity in the curriculum and in society. He describes four phases in the process. The first two let the pupils come closer to the content. The process starts with engagement and goes on to closer exploration of a material. The last two phases let the pupils distance themselves from the content by contextualization and then by reflection. His intention is not to provoke decisive moments in each pupil's experiences, but to let the pupils learn an approach to curriculum in which they can preserve and occasionally also develop their freedom (Hull 1992: 15 ff.; 2000: 112 ff.).

Conclusion

There is a paradox in education regarding freedom. Teachers who want to promote their pupils' freedom have to restrict it at the same time. In the philosophy of education there is a tension between understandings that emphasize transmission of cultural and traditional contents from the teacher to the pupils, and understandings that emphasize the children's and young people's ability to be responsible and make decisions for which there is no

precedent. There is also a tension between major functions of education in which pupils are socialized into preformed fellowships and ways of life on the one hand or are challenged to subjectification with autonomous and independent thinking and acting on the other hand.

Diversity and difference in the curriculum, which reflects the diversity in society, can promote freedom by giving the opportunity to respond to thoughts and practices which challenge pupils to think and behave in new ways. Experiences of freedom can come unexpectedly in moments where pupils make decisions with significance for their future life, but can also be promoted through processes where pupils get the opportunity to both discover and discuss diversity in the curriculum and in society.

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Science and Mathematics education

Developing an Instrument to explore Mathematical Identity: A Study of Students from several Third Level Institutions in Ireland

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Abstract: This paper presents collaborative work of a team of five researchers from five institutions on the island of Ireland in designing and implementing an online instrument to explore the Mathematical Identity of students in a flexible, yet efficient manner. The central notions of Mathematical Identity and narrative are presented and discussed in the context of different perspectives from the literature. The authors report on data, both qualitative and quantitative, gathered in the second quarter of 2013 from students in four third level institutions, and initial findings arising therefrom. There is evidence that many respondents expressed significant insight into learning and teaching mathematics and into their attitude to the subject as a result of using the instrument. The potential of the instrument for raising students' awareness of issues related to teaching and learning mathematics is promising.

Keywords: Mathematical Identity, narrative, online instrument, insight

Introduction

Mathematical Identity is considered as the multi-faceted relationship that an individual has with mathematics, including knowledge, experiences and perceptions of oneself and others (Grootenboer, Smith, and Lowrie, 2006; Kaasila 2007; Sfard and Prusak 2005; Wenger 1998). This paper offers a preliminary report on a collaborative study, Mathematical Identity using Narrative as a Tool (MINT), carried out on the island of Ireland by a research team of five colleagues from different higher education institutions. They are the authors of the paper. The project is based on two earlier projects involving three members of the team. One project focused on the Mathematical Identity of pre-service primary teachers specialising in mathematics; the other addressed undergraduate mathematics students taking modules on mathematics education. Results from both projects have been presented at ATEE conferences (Eaton and O'Reilly 2010, 2012; Eaton, Oldham, and O'Reilly 2012).

For MINT, the investigation of Mathematical Identity is extended to a broader cohort of students at the research team members' institutions. Building on the previous work, the research emphasizes the role of *narrative*, using the students' own stories of their

encounters with mathematics and their relationship with it to explore their *Mathematical Identities*.

This paper focuses on the development of the instrument used to gather information and on presentation of the first results from using the instrument with higher education students. The findings refer in particular to the level of student engagement with the process and the students' reported insights gained through completing the instrument.

Theoretical Framework

The theoretical framework for the study comprises two aspects: Mathematical Identity and narrative. They are discussed in turn.

Mathematical Identity

Our notion of Mathematical Identity emphasises the relationship an individual (especially a student) has with mathematics. This notion has much in common with Wenger's social learning systems (Wenger n.d.), but has identity centre-stage and considers how knowledge, community and learning (to use Wenger's terminology) relate to identity. Moreover, the notion focuses on what relates to mathematics and so does not have the breadth associated with identity as treated by Wenger (1998), for example. Our approach is, in a sense, not as ambitious as that of Sfard and Prusak (2005) where these researchers seek to use identity as a tool to investigate learning, equating identities with narratives. Instead, we choose to use narrative as a tool to reveal identity, the relationship an individual (or indeed a group) has with mathematics. This stance draws also from the work of Kaasila (2007, 2006): 'One's mathematical identity is manifested when telling stories about one's relationship to mathematics, its learning and teaching.' Like Kaasila, we acknowledge the close relationship between identity and its telling, yet we fall short of Bruner (1991) who contended that our personal narratives are our identities. It is our expectation that using narrative as a tool to disclose Mathematical Identity will be useful in encouraging insightful reflection by students, for example, and, in particular, pre-service teachers (Eaton and O'Reilly 2009a).

Wenger's work on identity can be traced back to his collaboration with Lave (Lave and Wenger 1991). In mathematics education, this work was developed in different ways by Boaler and Greeno (2000) who explore how identity allows access to different mathematical "worlds", by Walshaw (2004) who examines pre-service primary teachers' constructions of themselves as mathematics teachers, and by Graven and Lerman (2003) who make explicit the challenge for mathematics education in their review of Wenger's seminal work. Graven (2004) applies Wenger's theory to teacher learning, extending it to include the notion of (teacher) confidence. Smith (2006, 621) applies the theory to mathematics teacher education, that 'middle ground' allowing 'the creation of a personal position where different ways of knowing and being can coalesce in productive ways'. Grootenboer, Smith and Lowrie (2006, 612) see the potential of the concept of identity to

connect diverse elements (such as beliefs, attitudes, emotions, cognitive capacity and life histories) in mathematics education. This last paper, in particular, acknowledges the diversity of scholarly communities using psychological, sociocultural, and postmodern lenses with which to explore identity.

Independent (or so it would appear) of the Wenger school is the work of Drake, Spillane and Hufferd-Ackles (2001) who present the notion of a person's identity being understood as and through stories. In the context of the work of the US National Council of Teachers of Mathematics (NCTM), these authors consider identities in learning and teaching both literacy and mathematics; they notice common threads arising from the stories of mathematics teachers that they expect to inform future policy. Collopy (2003, 289), drawing on this work, describes a 'teacher's identity [as] the constellation of interconnected beliefs and knowledge about subject matter, teaching, and learning as well as personal self-efficacy and orientation toward work and change.' Philipp (2007, 259) uses the working definition for identity (p. 259): 'The embodiment of an individual's knowledge, beliefs, values, commitments, intentions, and affect as they relate to one's participation within a particular community of practice; the ways one has learned to think, act, and interact.' In this definition, we can see evidence of influences from several of the sources above.

DiME (2007, 409) notes that Sfard and Prusak (2005) point out that the field of mathematics education has yet to agree upon a working definition of *identity*; however, they (DiME) find it makes sense to follow Wenger (1998, 145) in proposing that, 'identity serves as the pivot between the social and the individual.' So, having returned to the researchers cited at the start of this discussion, we find our own working definition given at the beginning of this paper has served us well and continues to promise rich fruits as we apply it to our research across several institutions in Ireland, North and South.

Narrative

In their seminal work, *Narrative Inquiry*, Clandinin and Connelly (2000, p. 80) ask, 'Why use narrative inquiry?' They answer, 'Because narrative inquiry is a way, the best way we believe, to think about experience.' They reiterate this point six years later: 'Narrative inquiry, the study of experience as story, then, is first and foremost a way of thinking about experience' (Connelly and Clandinin 2006). Kaasila (2007, 205), in a similar vein, asks, 'Why are narratives so important? The answer is simple: we live in a world of narratives.' These authors set the scene for the use of narrative in MINT. In the case of a newly qualified teacher (Ulla), Lutovac and Kaasila (2009, 7) note that through narratives, 'we can see the development of Ulla's mathematical identity.' This also resonates well with MINT, *using narrative as a tool*.

As we have seen in the discussion above on identity, Sfard and Prusak (2005, 17) take a different stance: 'we suggest that identities may be defined as collections of stories about

persons.’ Just as these authors use identities (equated with narratives) as ‘a tool for fathoming the mechanism through which the wider community ... impinges on its members’ learning’ (p. 19), we prefer to pursue a line of investigation closer to that of Kaasila and his collaborators. In doing so, we do not reject the insights of Sfard and Prusak, but rather seek to find a discursive space where these different stances can not only coexist, but bring richer insights to experience, identity, narrative and learning in relation to mathematics, both for the individual and the ‘wider community.’ Sfard and Prusak (2005, 17) suggest that the approach of Wenger (1998) to identity is “essentialist” and undermines its “dynamic nature”. We do not see this as necessarily so. Nonetheless, we are inclined to support the view of Sfard and Prusak (2005, 17) that ‘identities are human-made and not God-given, they have authors and recipients, they are collectively shaped even if individually told.’

We do not seek to reconcile any of the tensions, explicit or implicit, of these or other authors, but seek to gain access to that fluid world of students’ Mathematical Identities through narrative, stimulating their recollections of how their relationship with mathematics evolved over time. In creating a space for this to occur, we have found it helpful to value the use of the open-ended prompt, “Tell me...” (Riessman 1993; Eaton and O’Reilly 2009b).

Background

MINT (Mathematical Identity using Narrative as a Tool) developed from two earlier studies: Mathematical Identity of Student Teachers (MIST) and the study referred to here as the ‘Bridging Study’ because of its role in leading from MIST to MINT. Here, we consider their design and evolution insofar as they are important for the discussion that follows.

MIST was carried out at two institutions, Stranmillis University College (SUC) in Northern Ireland and St Patrick’s College, Drumcondra (SPD) in the Republic of Ireland. It was funded by the Standing Conference on Teacher Education North and South (SCoTENS), a body that supports joint research on teacher education in the two jurisdictions on the island of Ireland. The first and last authors of the present paper carried out the research. It focused on the Mathematical Identity of student teachers who were intending to teach at primary level and who were specialising in mathematics (Eaton and O’Reilly 2009b).

The Bridging Study was built partly on MIST and partly on work involving mathematical autobiography carried out over many years by the fourth author (see Eaton, Oldham, and O’Reilly 2011). In this case, the students were undergraduate mathematicians at Trinity College, Dublin, who had elected to take modules in mathematics education. As part of the assessment of these modules, the students were asked to write their mathematical autobiographies, using the two-part MIST protocol (see below) to guide their responses.

To elicit students' narrative, the following two-part protocol was used in both MIST and the Bridging Study:

P1. Think about your total experience of mathematics. Tell us about the dominant features that come to mind.

P2. Now think carefully about *all stages* of your mathematical journey from primary school (or earlier) to university mathematics. Consider:

- Why you chose to study mathematics at third level
- Influential people
- Critical incidents or events
- Your feelings or attitudes to mathematics
- How mathematics compares to other subjects
- Mathematical content/topics

With these and other thoughts in mind, describe some further features of your relationship with mathematics over time.

For MIST, students were given time to respond to P1 before being presented with P2; this afforded them the opportunity to write about their experience with little direction initially, and then (using P2) invited them to consider aspects of their experience from a second perspective (Eaton and O'Reilly 2009b; Eaton, McCluskey, and O'Reilly 2011). This open-ended invitation to students to write their story was preceded by a 'P0' intended to stimulate that narrative by responding to the following eight 5-point Likert items:

1. Mathematics is a challenging subject.
2. Mathematics is more difficult than other subjects.
3. I have had an overall positive experience of mathematics.
4. Mathematics is irrelevant to everyday life.
5. I find mathematics intimidating.
6. I'll need a good understanding of mathematics for my future work.
7. Mathematics is interesting.
8. I feel competent in mathematics.

These were distilled from the work of Dutton (1954), Aiken (1974) and Tapia and Marsh (2004), and influenced also by Fennema and Sherman (1976) and Macnab and Payne

(2003). Since analysing students' attitude to mathematics, *per se*, was beyond the scope of MIST, these items were not used other than to stimulate the narrative.

For the Bridging Study, the stimulus, P0, involved students being asked to reflect on and discuss their likes and dislikes with regard to mathematics and to identify its nature, individually or in groups (as they chose). The two-part protocol (P1 and P2) was then given as an exercise to be completed outside lecture time.

For MIST, the narrative texts (responses to P1 and P2) were analysed for recurring themes, and clusters of issues were identified in order to give some direction to subsequent focus group discussions. These were held in each college, with a total of nine students participating, four in one college and five in the other. The complete set of field texts consisting of the questionnaire narrative responses and the transcripts of focus group discussions was analysed to identify common threads and themes (Clandinin and Connelly 2000). Analysis of these narratives, using a grounded theory approach, led to the identification of seven themes (Eaton and O'Reilly 2009b).

For the Bridging Study, the analysis used the MIST themes as the starting point (rather than grounded theory on a *tabula rasa*). The results have been reported by Eaton, Oldham and O'Reilly (2011).

As work on the Bridging Study drew to a close, the question naturally arose as to whether the themes that arose in the MIST data would be found in the narratives of other student cohorts. However, replication of MIST and/or the Bridging Study more widely would need to be streamlined.

By developing an easily administered instrument to explore students' Mathematical Identity, and by testing it out, the research team aim to make the tool available for application in a variety of settings. Teachers/lecturers administering such a tool to their classes could be expected to tune in more acutely to their students' learning, and thus improve their own effectiveness as teachers. Moreover, through use of the tool, students' awareness of how their Mathematical Identity can influence their learning could be expected to sharpen, enabling them to enhance their agency as learners.

With these ideas in mind, the team was augmented to five, joined by researchers from the University of Limerick (UL) and the Dun Laoghaire Institute of Art, Design and Technology (IADT), both in the Republic of Ireland. SCoTENS agreed to support the new project, MINT, which has the following aims:

- A1. To propose an efficient and effective protocol for third level mathematics educators to explore the Mathematical Identities of their students with a view to improving the teaching and learning of mathematics.

A2. To collaborate with researchers in institutions, other than SPD and SUC, in exploring students' Mathematical Identity.

A3. To extend the work on Mathematical Identity undertaken in the MIST project, thus giving insight into how the Mathematical Identities of different cohorts of student teachers compare with one another and with those of students in other disciplines.

To achieve these aims, the expanded team identified the following research questions for MINT:

Q1. Can Mathematical Identity be harnessed to deepen engagement by students in mathematics and its teaching?

Q2. Are there significant differences in Mathematical Identity between student teachers (from diverse backgrounds) and other students in Ireland? In particular, what are the characteristics of the Mathematical Identity of students from different third level institutions?

Methodology

Research Design

The design of MINT was based on the notions of Mathematical Identity and narrative (as explained in the theoretical framework above), together with modifications of the instrument used for MIST and the Bridging Study (as outlined in the background section). The expansion of the research team led to consideration of how the instrument might be adapted for a significantly larger number and more diverse cohorts of students across five institutions (later reduced to four for logistical reasons), in a manner that allowed for local flexibility within the context of a common approach.

Research Questions

Guided by the aims (A1-A3) and research questions (Q1-Q2) articulated in the original design of MINT, the team focused on two more specific questions to give impetus to the work:

- Does use of the MINT instrument provide students with any insight into how awareness of their Mathematical Identity might sharpen their learning and influence their attitude to mathematics?
- To what extent is there evidence of common characteristics relating to Mathematical Identity for different student cohorts?

Research Instrument

The most important new feature in the instrument design was to make it available online to allow for easy administration and data recording and to facilitate textual analysis. Demographic items on gender, institution, programme of study, year of study age, mathematics qualification thus far and grade achieved were included. The same Likert items (P0) were used as for the MIST study, as was the two-part protocol to elicit students' narrative (P1 and P2). To address the 'insight' question above, the protocol was extended to include a third open-ended item:

P3. What insight, if any, have you gained about your own attitude to mathematics and studying the subject as a result of completing the questionnaire?

Thus the resulting instrument was structured in three sections:

- S1. An introductory section asking respondents to provide demographic information (as outlined above)
- S2. The eight Likert items (L1-L8) as for the MIST study
- S3. The three-part protocol inviting open-ended narrative responses (P1-P3).

Based on the experience in MINT and the Bridging study, the research team initially considered a completion time between 40 and 60 minutes was appropriate. After the questionnaire was piloted, this was revised to between 20 and 60 minutes, and was included as a guideline for time required to complete the survey in the introduction to the questionnaire.

Data Collection and Research Sample

Once ethical clearance for its administration was obtained in all five institutions, data were collected in four institutions, from six cohorts of students. In total, there were 99 respondents, as follows:

- IADT
 - Entrepreneurship students: 1st year students (19 respondents) of the Bachelor of Business (Honours) in Entrepreneurship and Management programme and the Bachelor of Business & Entrepreneurship programme.
 - Applied Psychology students: 4th year students (16 respondents) in the BSc (Honours) in Applied Psychology programme.
- SPD
 - BEd Primary students: Student teachers (26 respondents) who were in the 3rd year (final year) of the Bachelor of Education programme for primary teaching and who were not specialising in mathematics.
- SUC

- BEd Post-Primary students: Student teachers (11 respondents) who were in the 1st and 2nd year of the Bachelor of Education programme for post-primary teaching and who were specialising in mathematics and science.
- UL
 - PE & Maths students: Student teachers (22 respondents) who were in the 3rd or 4th year of a concurrent four year BSc in Physical Education with Mathematics.
 - PDE Maths students: Student teachers (4 respondents) undertaking the Postgraduate Diploma in Education with Mathematics.

Some differences between the selected cohorts can be noted. Students in SUC and UL are studying to be secondary school specialist mathematics teachers. Students in SPD are studying to qualify as primary school teachers, while those in IADT are taking non-teaching programmes.

Data was collected between 16 April and 29 May 2013 using SurveyMonkey. Each of the researchers took responsibility for data collection in her/his own institution. Participation was voluntary in all institutions. The data was collected at a time when students were embarking on summer examinations; this is likely to have affected the overall response rate of 22%.

Data Analysis

SPSS was used to analyse the quantitative data: the demographic data, the responses to the Likert items, and the times taken in completing the instrument. The analysis of the substantive qualitative data (P1 and P2) – not addressed in this paper – will begin by an appraisal of the suitability of the themes identified in the MINT study for categorising this larger dataset. The third item (P3) was analysed, *ab initio*, using a grounded theory approach with SPSS and Excel to support the categorising process.

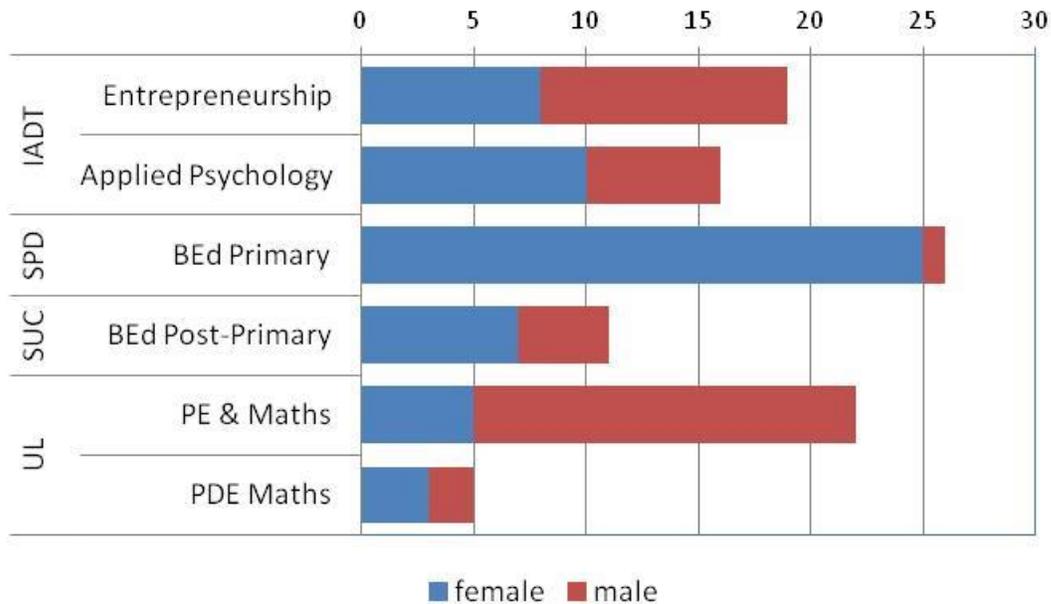
Findings

Quantitative Analysis

In this paper, we restrict the quantitative analysis to a brief presentation of the demographics, response times and lengths of responses.

There were 99 respondents. Most (80%) were in the age range 18-23 years, but 12% were in the range 24-27 years, while 8% were older. The distribution across the four institutions and six programmes is shown in Figure 1. Variability in gender balance across these programmes is evident: for example, the B.Ed. Primary cohort at SPD is predominantly female, while the PE & Maths cohort at UL is predominantly male.

Figure 1: Number of participants in the study by institute and gender



With regard to the time taken, the mean was 14.5 minutes with a median of 10 minutes, considerably lower than the time of 20-60 minutes envisaged and recommended by the research team. The distribution of the times taken by the participants to answer the survey is displayed in Figure 2.

Figure 2: Times taken by the participants to answer the survey by institution

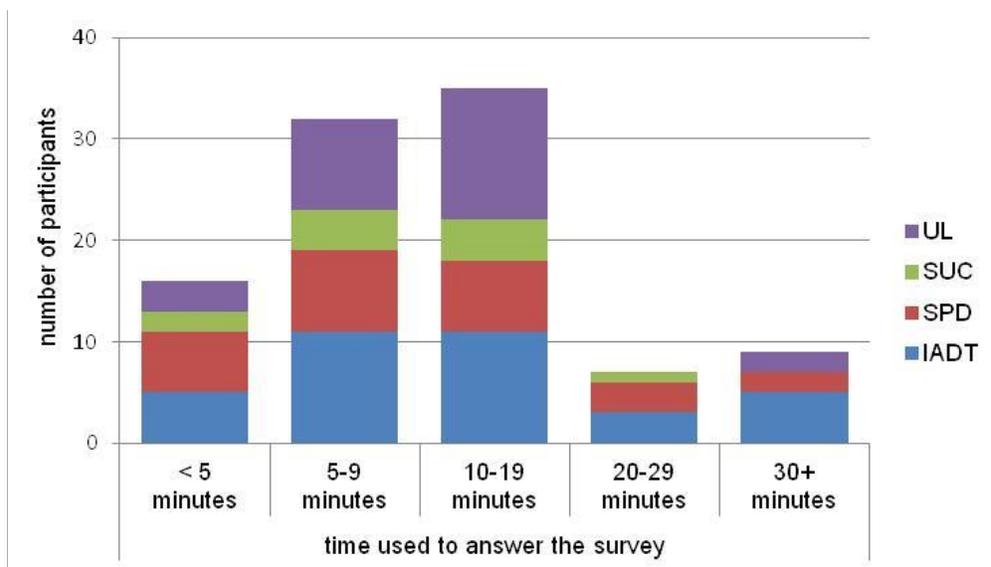


Figure 2 indicates a good spread of times spent to complete the questionnaire across the four institutions, with no strong differentiating characteristics emerging.

Of the 99 participants, 13 chose not to respond to any of the narrative questions. The number of words used to answer the three narrative questions (P1-P3, in section 3 of the questionnaire) ranged from 5 to 1050 words. Average total number of words for all three questions combined was 198. Fifty percent of students used between 100 and 244 words in total.

Qualitative Analysis

The focus of this paper is on the level of students' engagement with the instrument as expressed in the responses to P3, the third question in section 3: *What insight, if any, have you gained about your own attitude to mathematics and studying the subject as a result of completing the questionnaire?* To this end, four coarse categories (A-D) and a total of ten finer categories (0-9), ranging from 'no response' to a response reflecting deep engagement with meta-level issues, were identified as follows:

- A. No response or minimal response
 - 0. Left blank or entered *none*.
 - 1. Entered *it's alright*.
- B. No influence reported / apparent
 - 2. Entered *my opinions haven't changed*, or similar.
 - 3. Entered *it hasn't changed my attitude just made me dwell on my opinions of maths*, or similar.
 - 4. Entered *not much really*, or similar, followed by some **specific reflection**.
- C. One insight or more, (perhaps) from completing questionnaire, but not focused on teaching / learning
 - 5. Identified **one specific insight** (without denying the influence of the questionnaire).
 - 6. Identified **several insights** (typically about *loving/hating* or *enjoying/dreading* maths), but without emphasising learning or teaching the subject.
- D. Explicit attention drawn to their own learning, to teaching and/or attitudes to teaching mathematics
 - 7. Drew attention to their own experiences as learners and of what they valued in teachers.
 - 8. Drew attention to teaching and learning beyond their own experience, including their aspirations about how they themselves might teach.
 - 9. Drew attention to meta-issues by generalising from their own experience, encompassing, for example, significant changes in their own attitude towards maths or the importance of the subject in education in general.

After one author had assigned each response to exactly one of the ten finer categories, another author assigned the responses independently. The two authors agreed for 97 of 99 responses, showing a high inter-rater reliability. Here are examples of some responses in categories 5 through 9 (with the categories indicated and spelling corrected):

- *the insight I learned is that I don't really hate maths but I just don't necessarily like to do calculations* (5)
- *I prefer to use manipulatives and resources to develop an understanding of maths, as opposed to rote learning of definitions, formulae and theorems* (6 or 7)
- *I am continually being told how the new curriculum and the modern teaching strategies highlight conceptual understanding however I find myself wrestling with this because it is alien to me from how I have always been able to understand maths (through practice and repetition and learning).* (7)
- *I know that as a future maths teacher I don't want my students to have the negative experiences that I had through mathematics and hope that I can develop their interest in mathematics* (8)
- *This questionnaire has made me realise how my attitude towards maths has changed from third level education. It seems a reform of the education system of Maths is in order, rote learning is pointless, students should obtain an understanding of the concepts through examples which are relatable to learners' age.* (9)

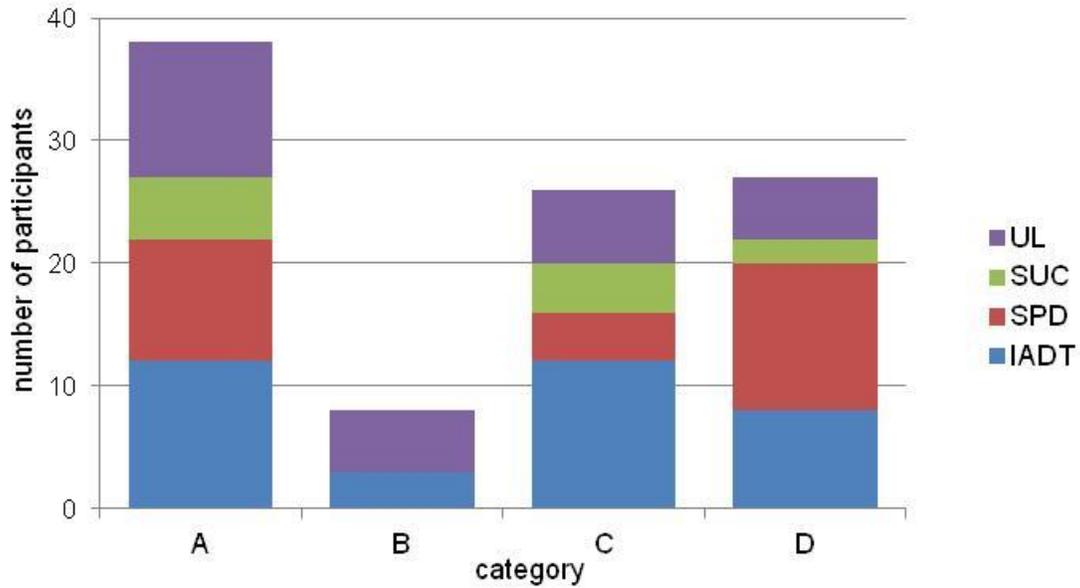
The frequencies for each category are given in Table 1 which indicates, once the 'no responses' have been excluded, that students demonstrated significant levels of insight in how they treated the question.

Table 1: Number of responses to P3 in each of the ten given categories

Coarse category	A		B			C		D		
Fine category	0	1	2	3	4	5	6	7	8	9
Number of responses	37	1	3	2	3	13	13	11	8	8

Now consider how the levels of response varied between institutions (Figure 3) and according to time spent in responding (Figure 4), using the four coarse categories.

Figure 3: Participants' response to P3 by category and institution



It can be seen that most levels of insight were represented in most institutions. A good proportion in each institution responded minimally (38.4% overall). Otherwise the institutional profile appears to vary significantly, with SPD students inclined to draw explicit attention to their own learning, to teaching and/or attitudes to teaching mathematics, while the responses of UL students are rather evenly spread across categories B, C and D.

Figure 4: Participants' response to P3 by category and time taken to answer the survey

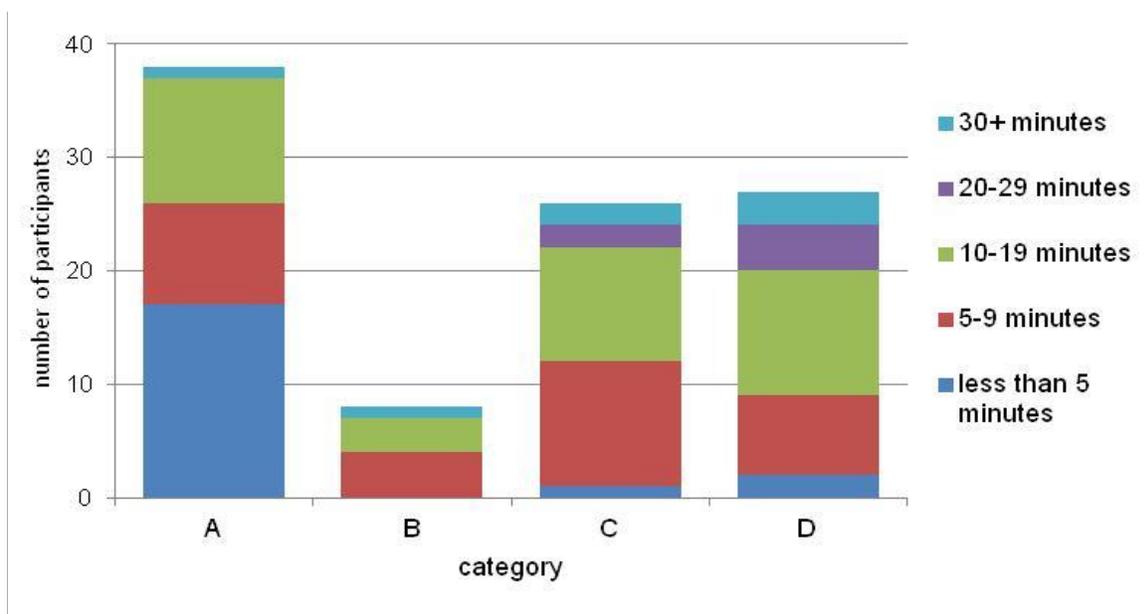


Figure 4 indicates that some responses taking no more than five to nine minutes contained illuminating reflective insights. Thus it does not appear necessary for students to spend a long time considering their responses in order for them to express significant insight.

Conclusion

This paper described the development of an instrument to gather information on the Mathematical Identity of higher education students and presented early results from its administration. The instrument was built on the authors' experiences with narrative questions from previous projects, but also included a variety of demographic information and some Likert-scale questions aiming to capture students' attitudes towards mathematics. It facilitates the comparison of different student cohorts and exploration of similarities and differences in narratives of students from diverse backgrounds. The online aspect allows for easy administration and automated capture of data for exploring Mathematical Identity. The first experience with the instrument showed that its setup and use by students is straight forward and therefore supports wider use in future.

One surprising result was the short time (on average 14.5 minutes) taken by most students to complete the instrument. However, even when giving as short a time as five to nine minutes, students demonstrated considerable insight, as a result of completing the survey, into their own attitude towards mathematics and studying the subject. Put another way, students can be both efficient and thoughtful in their response. This demonstrates the potential of the instrument to act as an effective tool to harness Mathematical Identity.

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Investigating Representations of Ratio among Prospective Mathematics Teachers: a Study of Student-Teachers and Students of Mathematics in an Irish University

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Abstract: This paper contributes to the ATEE Ratio Project, which aims to consider prospective teachers' understanding of ratio through the meanings and representations they associate with it. The paper describes a study undertaken in Ireland. Some modifications were made to the original instrument with a view to eliciting a wider range of meanings and representations than those obtained from Irish participants in the initial phase of the study. Responses from three small groups of prospective teachers – the original Irish participants and two other groups – are compared. Recommendations are made with regard to further development of the instrument and its use in teacher education as well as for research.

Keywords: Representation, Ratio, Teacher Knowledge

Introduction

The concept of ratio and the allied area of proportional reasoning are important throughout school mathematics. However, they are problematic topics, with research providing evidence that they cause difficulties for many students and also for some teachers. This latter aspect is a cause for particular concern, as it is likely to perpetuate the problems encountered at student level. Research is needed in order to investigate teacher knowledge further and to find ways of enhancing that knowledge through appropriate teacher education.

At the 2011 annual conference of ATEE, the Science and Mathematics Education Research and Development Community initiated a multiple case-study of prospective teachers' content knowledge of ratio for teaching mathematics and science. An instrument was developed in which students were asked about the meanings they ascribed to ratio and the representations they associated with it. Data were collected at four institutions, including one in Ireland. Analysis of the meanings and representations led to the conjecture that participants who offered meanings reflecting two variables, and who provided many, varied, and relevant representations, possessed *relational understanding* of ratio. The initial findings of the 'Ratio Project' were reported at the 2012 conference.

The present paper contributes to the study by undertaking a further round of data collection in 2013 in the Irish institution. The participants were student-teachers taking a Mathematics Pedagogy module in their teacher education programme – the equivalent group to that in the original study – and mathematics undergraduates taking a module on

Mathematics Education. Collectively, the participants can be labelled for the purposes of the study as 'prospective teachers.' Initial research questions included:

- A: What are the prospective Irish teachers' representations of ratio, and how do these differ among the three groups (the 2012 group and the two 2013 groups)?
- B: Do the data provide support for the Ratio Project conjecture on relational understanding?

Additionally, the paper focuses on the performance of the instrument used for data collection, with a view to undertaking further work in the area.

In the next two sections of the paper, relevant literature is reviewed and the ATEE Ratio Project is described. The context for Irish work on the project is provided in the following section. The remaining three sections deal respectively with methodology, findings and discussion, and conclusions.

Literature review

Four relevant fields of literature are discussed here: understanding in mathematics education; the role of representations; problems with ratio and proportional thinking; and variation in definitions of ratio and proportion. In the case of the first three, key research from the 1970s or 1980s is identified, and an outline is provided of subsequent developments in the field. The fourth topic is included to document some need for clarification of terms, particularly in an international study.

Understanding in mathematics education

A seminal paper by Richard Skemp (1976) distinguished two forms of understanding, 'relational' and 'instrumental.' Relational understanding is understanding 'why' and being aware of the connections between concepts in the conceptual structures that permeate mathematics; instrumental understanding is understanding 'how', hence being able to carry out procedures or demonstrate skills. Skemp's work was referenced in the influential Cockcroft Report, produced by a committee of inquiry into teaching mathematics in England and Wales (Cockcroft 1982). Of relevance here is the report's identification of three elements in the teaching of mathematics: facts and skills, conceptual structures, and general strategies – needing to be taught (and learnt) in distinctively different ways. The report endorses the achievement of 'fluency' in skills, but is opposed to 'rote' memorisation of anything that can be learned in a meaningful way. It emphasises the developmental nature of understanding and points, albeit somewhat indirectly, to the mutual development of Skemp's two forms (Cockcroft 1982, 69-71). In the USA, Hiebert's (1986) work on conceptual and procedural knowledge reflects Skemp's on relational and instrumental understanding, although using different terminology.

The debate between prioritising skills and prioritising (relational) understanding, discussed in the Cockcroft report, has continued – notably in the ‘Math(s) Wars’ that have flourished when and where curricula have been reformed (Abbott et al. 2010). In a major summary of research, Hiebert and Carpenter (1992) recognised the interdependence of skills and understanding but tended to point to development of understanding as the leading partner; other publications emphasise terms such as ‘sense making’ and ‘meaning making’ that reflect relational understanding (see for example Hiebert et al. 1997). However, by the turn of the century, a stronger focus on the joint value of the two forms of understanding was coming to prominence. The National Research Council (NRC) study *Adding it up: Helping children learn mathematics* specified five ‘strands’ of mathematical proficiency: conceptual understanding, procedural fluency, strategic competence, adaptive reasoning and productive disposition, with the choice of the word ‘strand’ highlighting their interdependence (NRC 2001).

These trends are mirrored in curriculum specifications. The National Council of Teachers of Mathematics (NCTM) document *Principles and Standards for School Mathematics* lists ten standards describing ‘a *connected* body of mathematical understandings and competencies’ indicating what students should know and be able to use (NCTM 2000, emphasis added). The more recent Common Core State Standards in the USA ‘define what students should understand and be able to do in their study of mathematics.... Mathematical understanding and procedural skill are equally important’ (Common Core State Standards Initiative 2010, 4). In Ireland, the latest versions of objectives for the – currently evolving – second level mathematics curriculum, ‘Project Maths’ (for grades 7-12), use the NRC (2001) definition of the development of proficiency; this has replaced Skemp’s (1976) terminology which had been employed in all previous second level syllabuses since 1990. It is perhaps important to indicate that older syllabuses also referred to understanding and skill, but the specifications and the relationship between them were based on – dare one say! – common sense and experience rather than being grounded in formal research (see for example Department of Education 1987, 54; Department of Education and Science 2000, 3; Department of Education and Skills 2013, 6).

Work on understanding usually refers tacitly or explicitly to the relational form, and much attention has been focused on how students can develop it. One way, of particular relevance to this paper, is by use of *representations*. Their role is now discussed.

The role of representations

Important work on representations was carried out from the early 1980s, and key aspects were discussed at and after a symposium held in 1984 (Janvier 1987). Lesh, Post and Behr (1987) characterised five different types of representation: experience-based ‘scripts’ in which knowledge is organized round real-world events; manipulatable models

such as Cuisenaire rods encapsulating the mathematical relationships between elements; pictures and diagrams; spoken languages, including specialized sublanguages such as that for logic; and written symbols, again involving specialized symbol systems as well as ordinary language.

Subsequent research from the late 1980s and 1990s is drawn together in a paper by Pape and Tscoshanov (2001) entitled 'The role of representation(s) in developing mathematical understanding.' The 's' in parentheses highlights that 'representation' can be a process or a product. They state: 'It is now well accepted that the use of particular modes of representations (e.g. visual or concrete) leads to improvement of students' mathematical abilities and development of their advanced problem solving and reasoning skills... That is, the use of multiple representations facilitates students' development of mathematical concepts' (Pape and Tscoshanov 2001, 120). They also emphasise the value of discourse among peers and teachers to negotiate and refine understanding (p. 124). Crowley and Tall (2006) emphasise the value of understanding links to and between procedures, as well as links between graphical and symbolic representations, again underlining the interdependence of relational and instrumental understanding.

Growing recognition of the importance of representation in curriculum specification, as well as in research, is indicated by the fact that representation is one of the five process standards in the NCTM's *Principles and Standards*. It states that all students should be enabled to create representations, use them to communicate mathematical ideas, and translate among representations to solve problems. The fundamental importance of representations for how people understand and use mathematical ideas is emphasised (NCTM 2000). In Ireland, the language of representations has been introduced in the Project Maths curriculum, a development highlighted below.

Problems with ratio and proportional thinking

Work on ratio from the 1970s and 1980s, notably by Hart and her associates in the UK, identified problems in responses from both primary and secondary students (Hart et al. 1989). The study of ratio and of representations was brought together explicitly by Lesh, Behr and Post (1987) in work that highlighted students' problems in moving between representations. Subsequently, major syntheses of research on ratio-related issues were produced by Behr et al. (1992) and Lamon (2007). Lamon's account emphasises changes in the field since 1992, and ends with a long list of unanswered but researchable questions. Livy and Vale (2011) provide a more recent summary of evidence that students in the middle years of schooling have poor understanding of ratio and proportional reasoning.

With regard to teacher knowledge, Lamon (2007) refers briefly to research in the area. Later work, particularly in Australia, is relevant here. In their study of 297 prospective teachers, Livy and Vale (2011) found low levels of correct responses to relevant ratio and

proportion test items. Chick's (2010) study of 40 practising secondary teachers identified some deficiencies in their knowledge for teaching ratio. The continuing importance of addressing knowledge for teaching the topic is indicated by the inclusion of relevant articles in the NCTM teacher journals (for instance Jarvis 2007; Rutchie and Bennett 2013).

Variation in definitions of ratio and proportion

A challenge in doing research on ratio and proportion lies in the fact that the underlying concepts are not always clearly defined (Lamon 2007). While it may be unproblematic to state that a ratio is a comparison of (or relationship between) two numbers measured in the same units (for example Jarvis 2007), there is disagreement on the extent to which part-whole relationships should be accepted as ratios. Following work by Clark, Berenson, and Cavey (2003), preference may be given to models that clearly involve two distinct variables, while part-whole relationships may be situated in the intersection between ratio and fraction.

As regards proportion, there appear to be cultural differences in the definitions. American literature typically refers to 'a proportion' as an equality between two ratios (see for example Jarvis 2007). In Irish and also English curricula, that formal definition is not used; the typical emphasis is on, say, the proportion of orange in an orange-and-water drink being such-and-such, expressed as a fraction or percentage (Suggate, Davis and Goulding 2006, 86).

The ATEE Ratio Project

As pointed out in the Introduction, the Ratio Project was initiated at the 2011 ATEE conference, and initial findings were reported at the 2012 conference (Berenson et al. 2013). As the present paper builds heavily on those findings, the work is described in some detail. For the initial phase of the study, the following research questions were chosen:

- (a) What meanings do prospective teachers at primary and secondary levels in [specific institutions in the participants' home countries] give to the term 'ratio'?
- (b) What multiple representations do these prospective teachers associate with the term 'ratio'?
- (c) Do the prospective teachers' descriptive meanings and representations indicate different levels of understanding for teaching ratio?

Participating members of the RDC devised a one-page instrument that could be administered within ten to fifteen minutes in appropriate classes: typically, of students in teacher education courses. Five items were presented:

1. What does the term 'ratio' mean to you?
- 2a. When do you use ratios?
- 2b. Who else uses ratios?
3. How do you represent a ratio using mathematical symbols?
4. Draw several representations of how ratios are used.

Localised versions of the instrument, reflecting differences in language and in the structure of the education systems, were prepared to allow for data collection in three countries.

Data from 158 students (including 16 Irish students) were collected and analysed. Initial examination showed that some participants provided rich explanations and illustrations, but the responses of some others were brief and relatively thin. Also, participants in general did not relate ratio to more advanced topics in the curriculum, such as trigonometry or rate of change; many instances, including ones offered by prospective secondary as well as prospective primary teachers, referred to concepts usually addressed in middle school grades.

Further analysis, undertaken using a grounded theory approach, focused chiefly on responses to items 1 and 4. From the meanings specified and the representations provided, three emergent themes with regard to *meanings* were identified (research question (a)). Some descriptions or representations emphasised or allowed the inference that the participants' concepts includes the notion of two distinct variables; some appeared to refer to uses or applications or special types of ratio; and some related to part-whole relationships. The themes can be labelled for convenience as 'two variables,' 'applications' and 'part-whole'; examples of key aspects to which participants referred are given in Table 1. In line with their preferred definition of ratio as involving two distinct variables (see above), the research team regarded responses classified as belonging to the third theme – ratio as meaning part-whole relationships – as tending to point to a lower level of understanding than those from the two-variable theme, especially if the part-whole meaning was presented alone.

Table 1: Emergent themes for participants' descriptions of the meanings they ascribed to ratio

Two variables	Applications	Part / whole
Comparison	Rate	Fraction
Relationship	Scale	Decimal
	Odds	Percent?
	Proportion	
	Division / splitting	
	Percent	

With regard to *representations* (research question (b)), the responses to item 4 displayed considerable variety. As well as typically reflecting one or more of the three themes, participants used different kinds of representation; some provided 'drawings' or other pictorial representations, as suggested by the formulation of the item, while others offered only symbols or words. Moreover, some participants made no response at all to this item. The word 'draw' may have suggested that verbal or symbolic responses were unacceptable, whereas a definition of representations as *any ideas associated with another idea in mathematics that is written, drawn, or spoken* includes these representations (see the classification by Lesh, Post and Behr (1987) cited above).

It remained to consider research question (c). Skemp's (1976) work on relational and instrumental understanding offered a way of categorising different levels of understanding, with a connection to multiple representations being provided by other research cited above. The research team conjectured that participants using more representations, and especially representations of different types, were displaying more relational understanding (Table 2). However, the team members were not able to make conjectures around participants' instrumental understanding, as none of the items in the instrument asked them to carry out a procedure.

Table 2: Conjectured indicators of presence or absence of relational understanding

Displays relational understanding	Does not display relational understanding
Meaning of ratio reflects two variables	Meaning of ratio does not reflect two variables
Provides many representations	Provides few representations
Uses multiple types of representation	Uses few types of representation
Cites / draws relevant applications	Provides symbolic representations only

The responses to item 3 did not contribute significantly to the investigation of understanding. The question as formulated asked participants to display factual knowledge, rather than understanding of why or how; it could be answered satisfactorily by provision of one (correct) representation, such as the colon symbol. Nonetheless, useful information with regard to understanding could sometimes be gleaned from more extended responses or from incorrect ones. Responses to item 2 were not considered in the paper.

Initial findings in grounded theory need to be tested with different samples to see if they are confirmed or contradicted. Work on the Ratio Project has therefore continued in the academic year 2012-2013.

Context of the Irish study

The follow-up study reported in this paper is part of the continuing work on the project. The authors were especially interested in carrying out further rounds of data collection in Ireland because of indications that ratio as a topic and proportional reasoning as a ‘golden thread’ have been given rather less attention in Irish curricula than is the case in some other countries (Oldham 2013). Ratio is mentioned only very briefly in the curriculum for the final grade in the primary curriculum (grades preK-6), while ‘ratio and proportion’ has typically been a one-line entry in successive versions of second level curricula (grades 7-12). The latest curriculum change at second level – Project Maths – has improved the situation somewhat, at least as regards the intended curriculum, but the effects (if any)

have yet to impact on university courses. Additionally, in the experience of the first author – extending over several decades – ratio and proportional reasoning have not been problematised in Irish discussions on mathematics education; moreover, according to the second author, who is involved in the professional development courses accompanying the rollout of the new curriculum, there has still been little or no explicit focus on ratio and proportional reasoning in its implementation. In both authors' experience, the concept, or at least the language, of representations and the provision of tasks involving students *creating* their own representations (compare NCTM 2000) have also been accorded little emphasis over the years, though – as mentioned above – the Project Maths curriculum does make some use of the language of representations (see for example DES 2013). Participation by mathematics education lecturers and students in a larger study could not only provide more insight into Irish student-teachers' understanding of ratio, but could also help to open up a general Irish discussion on ratio and proportional thinking.

The lack of focus on ratio and related concepts, together with unfamiliarity with the language of representations, may explain why some of the responses from the Irish cohort in 2012 were among those that were thin rather than rich. Further investigation with different cohorts is therefore relevant, with the twofold aim of *preparing for a larger Irish study* and *testing the operation and findings of the ATEE Ratio study with different samples and/or populations of participants*.

Methodology

This section addresses three issues. These are: changes to the instrument; choice of the sample and refinement of the research questions; and data collection and analysis.

Changes to the instrument

In view of limitations of the instrument emerging from the initial phase of the study, as described above, it was decided to amend the existing items 3 and 4 in the hope of attracting a wider range of responses. Thus, the items were reformulated as follows:

- Item 3: 'How do you represent a ratio using mathematical symbols? If relevant, indicate clearly which is/are the **main** symbol(s) but list others as well. *You may write expressions that include the symbols, rather than just the symbols themselves.*'
- Item 4: 'What representations – drawings, charts, graphs, words, and so forth – might you use to explain ratio and show how it is used? *Present your ideas here and/or overleaf as you wish.*'

Extensions to the scope of the instrument to capture instrumental understanding were considered. An item on instrumental understanding might contain an example or examples for the respondents to address, or else ask respondents to provide a 'ratio calculation' of their choice. However, the former approach might skew the responses to

other items towards the symbols or representations used; the latter, while perhaps encouraging creativity and giving further insight into relational understanding, could add significantly to the time taken for administering the instrument. In either case, the additional item could detract from the usability of the instrument with future cohorts in time-pressurised education programmes. It was therefore decided to make no further changes at this stage.

Choice of the sample and refinement of the research questions

Two groups, both from the institution at which the authors teach, were chosen for participation in the 2013 study. They were graduates taking Mathematics Pedagogy in their teacher education course, the Professional Diploma in Education (PDE) – the equivalent group to the Irish participants in the original study – and Mathematics undergraduates taking a module on Mathematics Education as part of the third or fourth year of their degree programme. The Mathematics Education module requires students to help in school classrooms, entitling them to be called ‘prospective teachers’ in this study. Typically, Mathematics Pedagogy groups contain some students who have done only a little mathematics in their degree programmes (for instance, in Biology or Business), whereas the Mathematics students are specialising in the subject or taking it as a major component of their studies. Some difference in the overall levels of understanding of the two groups can be hypothesised.

As analysis of the Irish data from the original study had been only briefly reported separately from the other international data (Oldham 2013), the present study focuses on data from all three groups: henceforth referred to as PDE 2012, PDE 2013 and Maths 2013. Research question A, as set out in the introduction, was therefore refined as follows.

- (Ai) Is the range of representations obtained using the amended instrument greater than before? If so, in what ways?
- (Aii) In other respects, are the PDE 2013 students’ responses similar to those of the PDE 2012 group?
- (Aiii) What are the similarities and differences between the responses of the PDE 2013 and Maths 2013 groups?

Data collection and analysis

The instrument was given to the Mathematics Pedagogy class at the start of a lecture (as had been done the previous year), and to the Mathematics education class at the end of a lecture. A period of ten to fifteen minutes was scheduled for the exercise in each case. It can be noted here that the PDE 2013 students finished comfortably in the allotted time – as their predecessors had done in 2012 – but that several of the Maths 2013 students did not; they completed the work outside class time.

The data collected in 2013 were summarised and coded using a procedure similar to that in 2012 (Berenson et al. 2013). Thus, for item 1, occurrences of each entry in Table 1 above were counted for each of the 2013 participants; similar tallies were made for items 3 and 4. Item 2 was not considered for this paper. The 2012 and 2013 data were then analysed together. The small size of the groups, and also the differences in the instrument (between the 2012 and 2013 groups) and administration time (between the Maths and PDE groups), limited the types of analysis undertaken, as described below.

Findings

A total of 33 completed instruments was received in 2013. The distribution of participants over the two years is shown in Table 3.

Table 3: Numbers of participants, by group

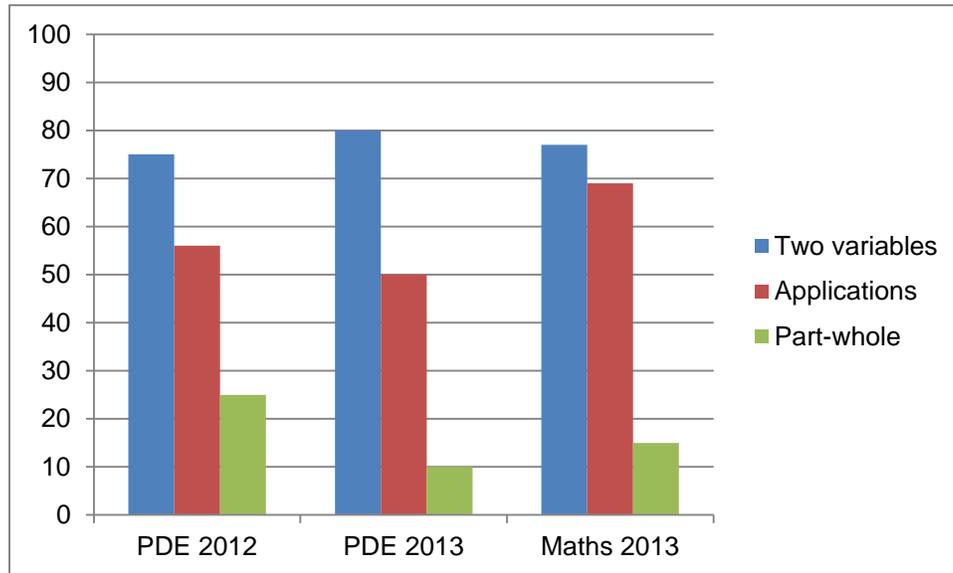
Year	Course	N
2012	PDE 2012	16
2013	PDE 2013	20
	Maths 2013	13

The meanings and representations offered by the three groups are discussed in turn.

Meanings of ratio

The meanings that participants explicitly ascribed to ratio occur in their responses to item 1. Figure 1 shows the distribution of the responses, classified by group, across the three themes (Table 1). Most students (three-quarters or more in each group) offered at least one meaning that reflected two variables, typically mentioning comparison or relationship or both. The PDE 2012 group had the highest percentage giving a part-whole meaning, but numbers are small in all cases (four PDE 2012 students, two PDE 2013 students and three Maths 2013 students). For all groups, the most usual response from the ‘applications’ theme was proportion, reflecting the Irish/English usage described above.

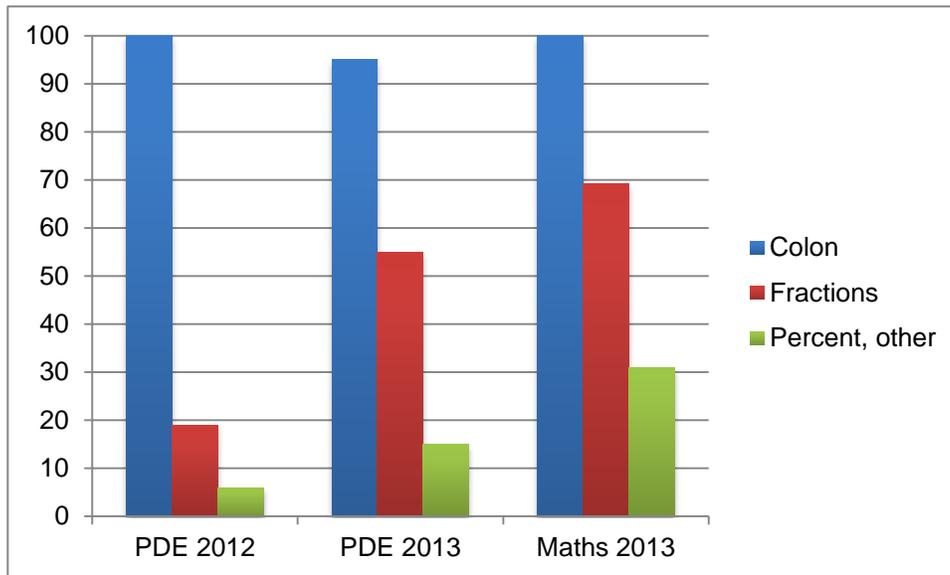
Fig. 1: Percentages of each group referring to each of the three emergent themes in responses to item 1



Representation by mathematical symbols

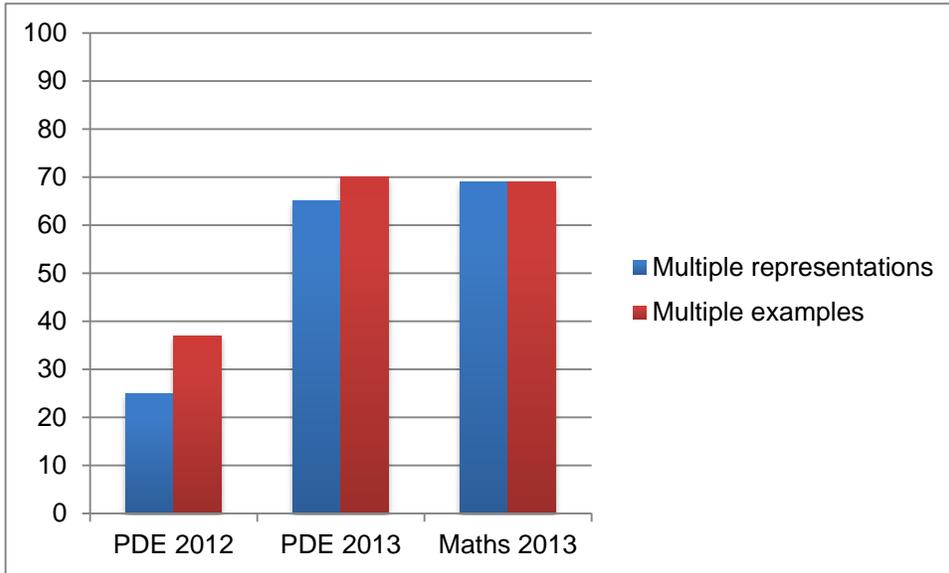
Again, the explicit responses, in this case to item 3, are counted, rather than symbolic representations used in responses to other items. Guided by the data, responses were classified as: colon; fractions (including use of the division slash and decimal notation); and percent and other responses. The distribution is shown in Figure 2. Overall, all but one of the participants used the colon notation, often as the main one; just three out of each of the 2013 groups gave priority to the 'fraction' notation. It should be noted that, in this case, there is no pejorative connotation in the 'fraction' classification; the notation (as opposed to a part-whole meaning) is fully acceptable.

Fig. 2: Percentages of each cohort using each main type of symbolic representation in responses to item 3



As noted earlier, this item taps knowledge of facts rather than understanding, but in its amended form it does ask participants to display knowledge of multiple representations. Figure 3 shows the percentages of each group offering multiple representations and multiple examples (the latter figure including multiple instances of the same representation). The two 2013 groups – responding to the altered item – produced more examples than the 2012 group.

Fig. 3: Percentages of each cohort using multiple representations / examples in responses to item 3



Representations for explanation and use

As shown in Figure 4, four of the PDE 2012 participants made no response to the original item 4. However, for the updated item, all 2013 participants responded, and most provided more than one example.

Fig. 4: Percentages of each cohort providing (multiple) examples in responses to item 4

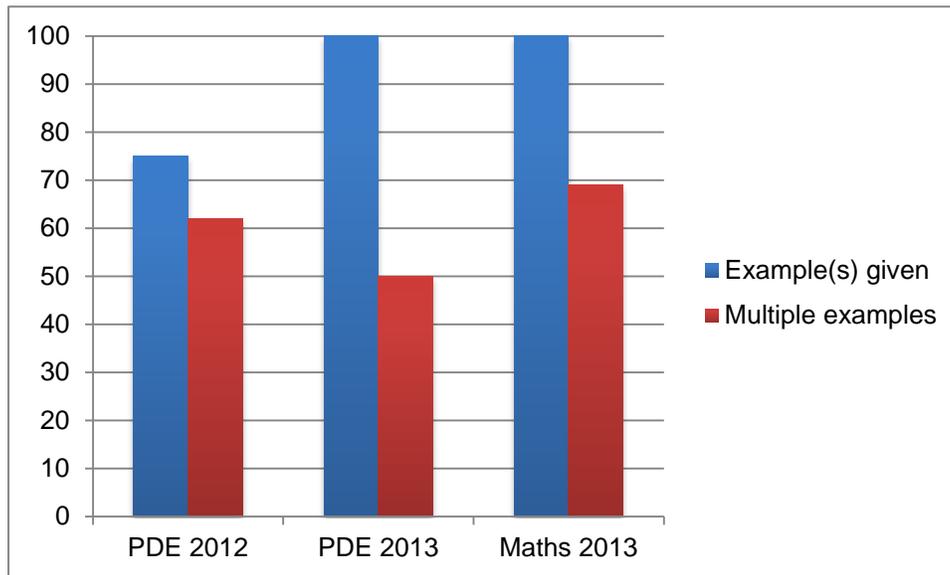
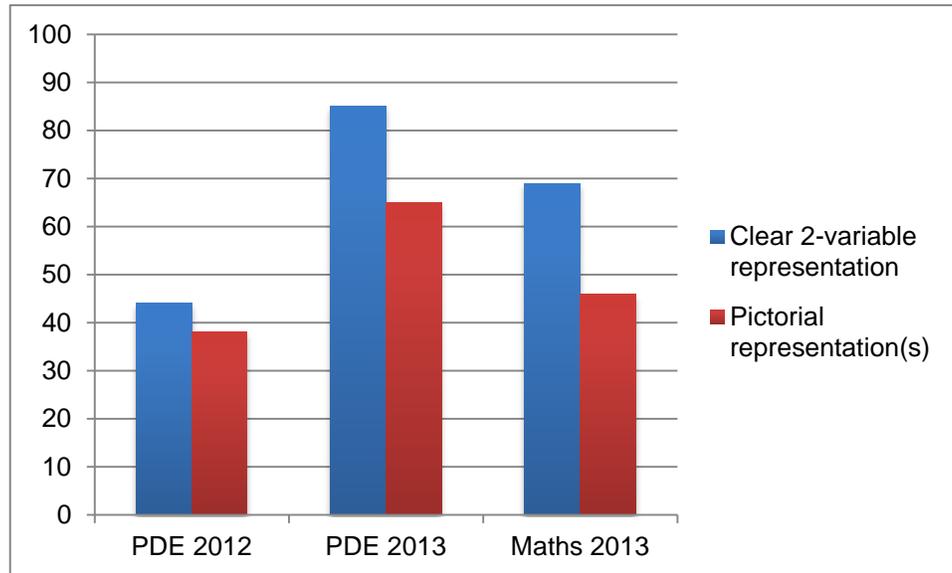


Figure 5 reports on two areas of interest: choice of a representation that clearly reflects a two-variable meaning for ratio, and provision of a pictorial representation (drawing, chart, and so forth). The figure shows the percentage of each group offering at least one example in each case. While the reformulated item explicitly allows verbal or symbolic representations, visual or graphic ones perhaps give more scope for imagination. Moreover, for some verbal explanations, insufficient detail was provided to show if a two-variable meaning was intended; this affects the percentage especially for the Maths 2013 group, who were the most inclined to use verbal explanations.

Fig. 5: Percentages of each cohort providing clear two-variable representations and pictorial representations in responses to item 4



Rather than providing further quantitative analysis of this small data set, it is appropriate here to include some of the responses to indicate their scope and style. They are presented in the Appendix. Figure A1 shows extreme examples from the PDE 2012 group: a rich pictorial response and one using only words or symbols. Figures A2 and A3 show examples from 2013 for which the participants provided respectively just one pictorial example and multiple examples, all being clear instances of the two-variable meaning of ratio. Figure A4 shows one of several extended responses from the Maths 2013 group. The predominance of middle-school examples in all figures reflects the overall pattern; the Maths 2013 group and PDE 2012 groups were more inclined than the PDE 2013 group to mention more advanced topics such as similar triangles (Fig. A2).

Answers to research questions

The refined research question A can now be answered as follows. The reformulated items elicited more responses: more symbolic representations for item 3, and more responses of various kinds for item 4. However, incorporation of the word 'explain' in item 4 may have skewed the responses towards verbal ones and suppressed some of the creativity shown in the 2012 drawings. The correct balance in the wording of this item still has to be struck. Subject to these exceptions, the styles of response of the two PDE groups were similar. The Maths 2013 group overall produced richer answers than the PDE groups, but this may chiefly reflect the greater time they devoted to the exercise rather than deeper knowledge. Perhaps a longer timeframe than the suggested 10 to 15

minutes would allow participants to tap into more of their knowledge and show their understanding.

This leads to discussion of research question B with regard to the ATEE Ratio Project conjecture on relational understanding. The authors did not find a way of using the responses as the basis of a metric measuring relational understanding reliably and validly; in particular, brief responses – using or omitting ‘keywords’ such as ‘comparison’ – could be poor indicators of depth or stability of understanding. One way forward, as suggested in the initial report (Berenson et al. 2013), would be to develop an interview protocol and explore selected participants’ understanding in depth. Another would be to use the instrument as the basis for *class discussion*. Students might complete the instrument individually, but then share, clarify and deepen their understanding, as recommended by Pape and Tchoshanov (2001) – thus contributing to teacher education directly as well as via research.

Conclusion

It is clear that the topics of ratio and proportion require attention and research, particularly when mathematics teachers appear to be unsure in their own understanding of ratio and proportion. The ATEE Ratio Project, to which this paper contributes, aims to find the meanings and representations that prospective teachers associate with ratio, and hence to consider ways of describing their levels of understanding. In Ireland, ratio and proportion have been largely accepted as intuitively understood by students and teachers alike. However, analysis of the first round of data collected for the Ratio Project indicated that some of the small group of participant Irish pre-service teachers found difficulties in describing adequately what ratio means and in providing appropriate representations.

This paper describes a further round of data collection and analysis in Ireland, using an amended instrument that might encourage fuller responses. The two student groups – again small – participating in the exercise provided richer responses to the altered items. In many other respects the responses of the three groups were similar. A larger-scale Irish study is envisaged, both investigating the Irish situation further and opening up discussion on teaching and learning ratio to support recent curricular developments.

The paper also aspires to contribute to the ATEE Ratio Project by suggesting further refinements to the instrument and protocols for international use. Cultural differences in understanding of terminology will have to be taken into account. As well as interviews with participants, use of the instrument to promote discussion of ratio in teacher education classes may offer deeper insight into prospective teachers’ understanding of this topic.

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Appendix

Fig. A1: responses to item 4 from the PDE 2012 group: 'Draw several representations of how ratios are used':

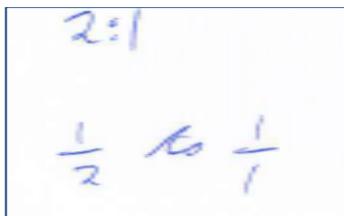
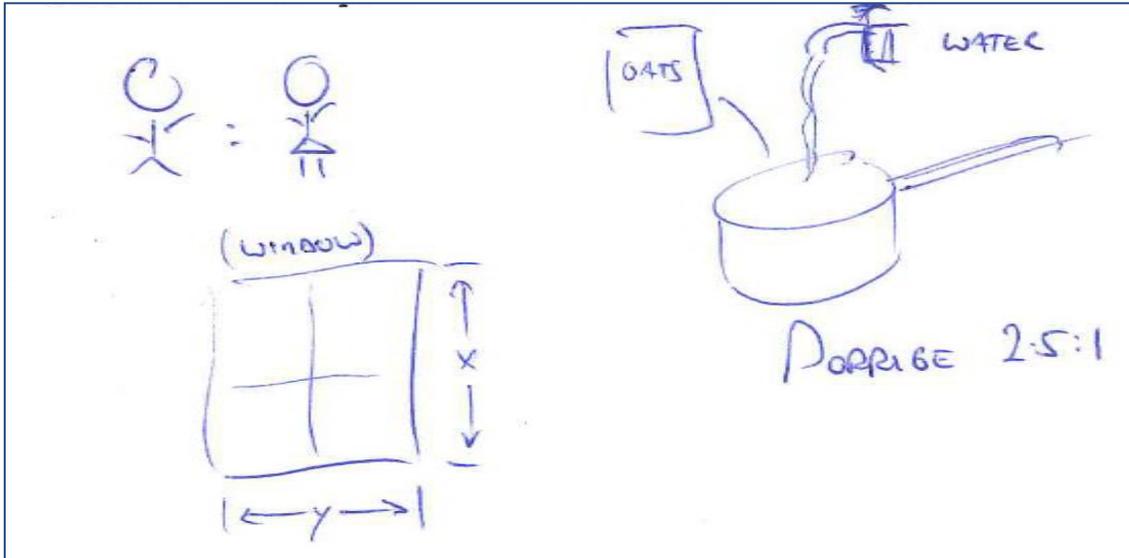
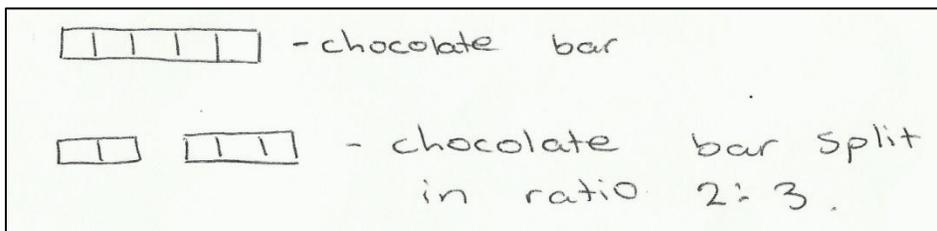


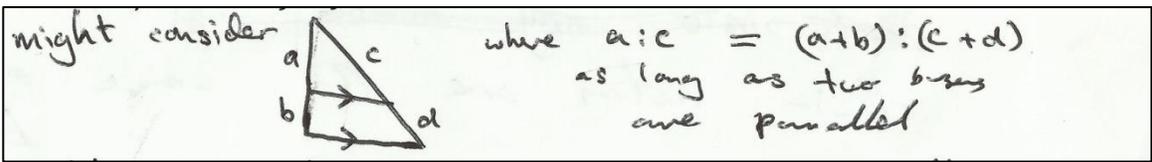
Fig. A2: Responses to item 4 from the 2013 groups: one pictorial representation offered (with explanations; other, non-pictorial, examples not shown)



(PDE 2013 – typical representation)

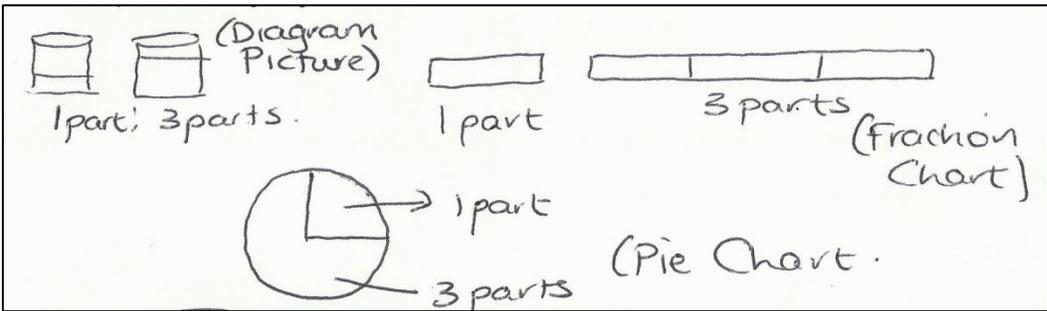
$$\begin{aligned}
 \circ \circ * \circ * \circ \circ \circ &= \circ \circ * * + \circ \circ * * = \frac{6}{2} : \frac{4}{2} \\
 &= 3 : 2 \\
 &\text{circles } \& \text{ stars}
 \end{aligned}$$

(PDE 2013 – unusual representation)

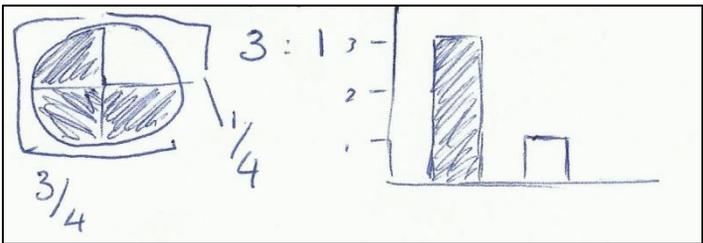


(Maths 2013)

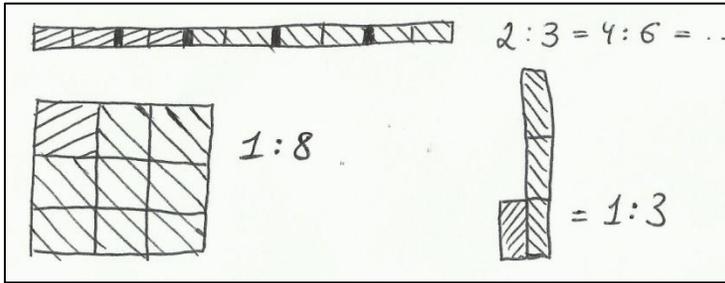
Fig. A3: Responses to item 4 from the 2013 groups: clear two-variable representations – multiple representations and/or examples



(PDE 2013)



(PDE 2013)



(Maths 2013)

Fig. A4: response to item 4 from the Maths 2013 group

<p>3. How do you represent a ratio using mathematical symbols? If relevant, indicate clearly which is/are the main symbol(s) but list others as well. You may write expressions that include the symbols, rather than just the symbols themselves.</p> <p style="text-align: right;">MAIN : —</p> <p>PICTURES (NOT REALLY MATHEMATICAL) $\begin{matrix} \circ & \circ & \circ & \circ \\ \times & \times & \times & \times \end{matrix} : \begin{matrix} \circ & \circ & \circ & \circ \\ \times & \times & \times & \times \end{matrix}$ <u>1 GUESS!</u></p> <p>$\begin{matrix} \circ \\ \times \end{matrix} : \begin{matrix} \circ \\ \times \end{matrix}$ THIS SHOULD BE OVER IN 4 ACTUALLY!!</p> <p>(2) $2 : 4$ (2) $1 : 2$</p>	<p>4. What representations – drawings, charts, graphs, words, and so forth – might you use to explain ratio and show how it is used? Present your ideas here and/or overleaf as you wish.</p> <p style="text-align: right;">USE IT ETC (MIXING CEMENT), BETTING.</p> <p>$\frac{1}{2} = \textcircled{1} = 1:1$</p> <p>$\frac{1}{4} : \frac{3}{4} = 1:3$</p> <p>SPLIT $x:y$ FOR EVERY x OF (THING 1), WE HAVE y OF (THING 2)</p> <p>5 SHEETS OF PAPER RIP IT UP \Rightarrow 5 PIECES TO 3 PIECES</p>
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(Maths 2013)

Teachers' Use of Ratio

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Abstract: This paper is one of a cluster presented to the Science and Mathematics Education Research and Development Community (RDC) at ATEE conferences in 2012 and 2013 on teachers' and prospective teachers' understandings of *ratio*. Using an instrument devised for the RDC's study of ratio, the author collected data from three groups of people: pre-service elementary teachers at her institution; science majors taking courses also taken by the pre-service teachers; and teachers already in service. In the paper, comparisons are made between the responses from the three groups. Implications for teacher education are noted.

Keywords: Ratio, pre-service teachers, in-service teachers

Introduction

This paper is one of a cluster of five, presented to the Science and Mathematics Education Research and Development Community (RDC) at ATEE conferences in 2012 and 2013. The papers address the RDC's current project: teachers' and prospective teachers' understandings of *ratio*. According to Lamon (2012), ratio is a comparison of any two quantities – an ordered pair that conveys the relative sizes of the two quantities. Research carried out over the last forty years indicated that the concept is a problematical one for many students, and recent work indicates that difficulties are experienced also by some teachers. For example, with regard to the latter, Livy and Vale (2011) report on the poor performance of their sample of prospective teachers on items testing ratio and proportion; Chick (2010) studied 40 practising secondary teachers and identified some deficiencies in their knowledge for teaching ratio. Livy and Vale (2011) also provide a general summary of the research on ratio. Further summaries are provided by RDC members' contributions to the 2012 and 2013 ATEE conferences (Berenson et al. 2013; Leite, Fernandes, and Jesus 2013; Oldham and Ni Shuilleabhain 2013; Price 2013), and so are not replicated here.

Among the cluster of presentations to the RDC on ratio, the special contribution of the work described in this paper is twofold. It provides a focus on the way in which teachers and prospective teachers envisage the *use* of ratio; also, it is the first to include in-service as well as pre-service teachers.

Background

The original RDC study of ratio, 2011-2012

During the meeting of the Science and Mathematics RDC at the 2011 ATEE conference, the RDC members selected a research project related to pre-service and in-service teachers' understanding and use of ratio. Initial research questions were:

- What representations do the participants use to represent ratio?
- What similarities and differences are noted between the different categories of participants?

The representations were to be determined through the participants' responses to a five-question survey developed chiefly by one of the group members, Dr. Sarah Berenson. The project survey was administered by four RDC members, one from Ireland, one from Portugal, and two from the United States. The pre-service and in-service teacher participants were grouped as Primary Teachers (grades K-6), Secondary Science Teachers (grades 7-12), and Secondary Mathematics Teachers (grades 7-12), with suitable adjustments to the grade or level descriptions as required for matching the structures of different countries' education systems. The volunteer unnamed participants were asked to complete in ten to fifteen minutes a one-page form (Appendix 1) that contains the following items:

1. What does the term "ratio" mean to you?
2. When do you use ratio?
3. Who else uses ratio?
4. How do you represent ratio using mathematical symbols?
5. Draw several representations of how ratios are used.

Refined research questions for the first round of analysis were specified as follows:

- a) What meanings do prospective teachers at primary and secondary levels in Ireland, Portugal and the USA give to the term "ratio"?
- b) What multiple representations do these prospective teachers associate with the term "ratio"?
- c) Do the prospective teachers' descriptive meanings and representations indicate different levels of understanding for teaching ratio?

The results of responses to items 1, 4 and 5 and the analyses of these answers were presented to the RDC at the ATEE Conference in Eskisehir, Turkey, August 25-29, 2012 (Berenson et al. 2013). Findings indicated that there was a wide range of meanings and representations, some reflecting the concept of ratio as involving comparisons or relationships, but others focusing more on fractions or part-whole situations. It was conjectured that the former were more likely to indicate that the participants had *relational understanding* of ratio (Skemp 1976).

Comparison of Science Majors and Non-Science Majors, 2012

As the data was being collected and analyzed, one RDC member from the United States – the author of this paper – had the opportunity to collect data from science major students who were not enrolled in the education program but who were enrolled in mathematics and science classes required for the pre-service teachers. This situation called for a new

research question, addressing one of the original questions formulated for the study as specified above with regard to the similarities and differences in responses from different categories of participant:

- How are the representations similar and different between Science Majors and Non-Science Majors?

To address this research question, the responses of thirty seven (37) students in several science and mathematics courses were collected and analyzed. These students were designated as Group I, the Science Majors. The results were then compared to the responses of the participants from the same institution in the main study, sixty four (64) pre-service elementary teachers; these were designated as Group II, the Non-Science Majors. In the process of the analysis, the following steps were taken. For each question:

1. Each response for each participant was recorded
2. Similar responses were collected into appropriate sub-groups
3. A percentage value per sub-group was calculated and recorded.

The process can be illustrated for question 1 (see Appendix 2). One of the sub-groups was formed by responses that referred to *comparing* or *comparison* (see Lamon 2012). From the 37 Science majors, 45 responses were received to the item; of these 45 responses, 23 (51.11%) referred to comparisons. Similarly, again for the Science Majors, 8 of the responses (17.78%) formed the sub-group dealing with *relation* or *relationship*. The corresponding percentages for the Non-Science Majors (64 participants, 67 responses to question 1) are 44.80 and 11.80 respectively. It can be noted that, according to the conjecture made by Berenson and others (2013), these dominant responses point towards the participants who made the responses having *relational understanding* of ratio.

The five questions and the sub-groups used for each question are given below.

Question 1: What does the term “ratio” mean to you?

- a. Use of the word “compare” or “comparison”
- b. Use of the word “relation” or “relationship”
- c. Percent or percentage.
- d. Fraction
- e. Any other term (14 different terms)

Question 2: When do you use ratio?

- a. Mathematics
- b. Science

- c. Recipes/cooking
- d. Coaching/training
- e. Comparing
- f. Statistics
- g. Other (24 different terms)

Question 3: Who else uses ratios?

- a. Accountants
- b. Statisticians
- c. Teachers
- d. Engineers
- e. Mathematicians
- f. Scientists
- g. Business
- h. Cooks
- i. Everyone
- j. Other (19)

Question 4: How do you represent a ratio using mathematical symbols?

- a. Words only
- b. Fraction
- c. Percent or Percentage
- d. Using ____ to ____ or ____:_____
- e. Drawing
- f. Nothing
- g. Other (5)

Question 5: Draw several representations of how ratios are used.

- a. Fractions
- b. Percentage
- c. Words ____ to ____
- d. _____:_____
- e. Above a + b+ c or +d
- f. Drawings:
 - i. Boxes
 - ii. Circles
 - iii. Boxes and circles
 - iv. Stick figures
 - v. C + D
 - vi. Diamonds

- vii. Other (5)
- viii. Nothing
- g. Written explanation

The findings were presented at the ATEE conference in 2012 (Price 2013). Results for the two groups were generally similar, though with some predictable variations reflecting Group I participants' special interest in science. The analysis is shown in Appendix 2.

Further work, 2013

In addition to the work reported below, two other contributions were made to the RDC's project on ratio at the 2013 ATEE conference. As with the paper by Price (2013), Oldham and Ni Shuilleabhain (2013) compared and contrasted two groups, in their case pre-service secondary teachers taking a mathematics pedagogy course and undergraduate mathematicians taking an optional module on mathematics education. The analysis took into account only responses to items 1, 4 and 5, as in the original paper by Berenson and others (2013); it focused on examining the conjecture made in that paper with regard to relational understanding. The paper by Leite, Fernandes and Jesus (2013) examined responses to all five questions by a cohort of 81 pre-service primary teachers; the range and frequency of the responses provide interesting comparisons with the findings reported below.

New study involving in-service teachers, 2013

With the background stated above and with the desire to understand more thoroughly pre-service and in-service teachers' methods of teaching and using "ratio," the author sought to investigate further. In order to learn more about how pre-service and in-service teachers define and use "ratio" two new research questions were proposed as follows:

1. How are the representations similar and different between in-service primary [elementary] and secondary [middle school and high school] teachers' responses to the five questions?
2. How are the representations similar and different between pre-service primary and secondary teachers compared to in-service primary and secondary teachers to the five questions?

The five questions used in the survey (the same as the previous study) are listed below:

1. What does the term "ratio" mean to you?
2. When do you use ratio?
3. Who else uses ratio?
4. How do you represent ratio using mathematical symbols?
5. Draw several representations of how ratios are used.

Included on the survey sheet (Appendix I) that the volunteers completed were places to designate their level (elementary, middle, or high school), the specific subject matter area if in middle school or high school, and the number of years for which the volunteer had been teaching.

To address research question 1, the surveys were completed by volunteer teachers in a nearby private school a few days before the summer vacation period. There were seven middle and high school teachers that responded: four that taught mathematics (36 years, 27 years, 4 years, and years not given), one that taught science (1 year), one that taught art (6 years), and one that taught “other” (number years not given). The number of years these volunteers had taught therefore ranged from one to thirty six. There were ten elementary school teachers that responded. Of the ten volunteers four did not state their teaching years; the others had been teaching for 9, 10, 12, 17, 22, 23, and 34 years. The 17 in-service teachers constitute Group III for the author’s study.

In the process of the analysis, following the same procedure as the in 2012 study (Price 2013), each response for each participant was recorded; then similar responses were calculated in sub-groups and a percentage value was calculated and recorded. It should be borne in mind that the numbers are small, and hence that further statistical analysis such as examination of the significance of different response percentages would be inappropriate.

To address research question 2, the results from Group III were considered alongside those from Group II, the 64 pre-service elementary teachers included in the 2012 study (Price 2013). Again, because of the small numbers particularly in Group III, no further statistical analysis was undertaken. The results are presented in the following section of the paper.

Results

The results of the survey of in-service teachers are listed by each respective question and the percentage score for each response in Appendix 3. The combined results for Groups II and III are presented in Appendix 4. To facilitate ease in reading Appendix 4, the top two selections for both pre-service and in-service teachers are highlighted, as are the results for the selection “other” which varied in all groups.

It should be recalled that according to Lamon (2012), a ratio is a comparison of any two quantities – an ordered pair that conveys the relative sizes of two quantities. She points out that it may be expressed as a rate, such as miles per hour, or by other uses of “per” such as candies per bag (Lamon 2012). Many of the volunteers may have used these concepts of ratio when they made their specifications.

Question 1: What does the term “ratio” mean to you?

An analysis of responses to question 1, “What does the term ‘ratio’ mean to you?”, showed that “Comparison” was the number one choice for both pre-service and in-service teachers. In Group II (Pre-service) the value was 44.80% and in Group III (In-service Elementary and Middle and High School) the values were 33.33% and 70.00% respectively.

The second highest choice (disregarding “Other”) for question 1 differed with respect to pre-service and in-service teachers as pre-service and in-service elementary teachers provided “Relationship” at 11.80% and 33.33% respectively, but no middle or high school teacher provided a response in this category. For pre-service teachers, “Percent” at 10.30% was a close third to “Relationship.”

The category “Other” had a somewhat similar pattern of results for question 1, as pre-service teachers’ values were 29.40% while in-service middle and high school values were 30.0%; in this case, no in-service elementary teacher’s response fell in this category.

Question 2: When do you use ratio?

Pre-service teachers provided “Mathematics” at 24.78% – apart from the residual category “Other” – while in-service elementary teachers, middle school and high school teachers provided “Comparing” at 20% and 41.18% respectively as the number one answer for this question. “Comparing” was the number two choice for pre-service teachers but “Mathematics,” “Cooking,” “Statistics” and “Sports” were the joint number two choices at 13.33% each for the in-service elementary teachers. “Mathematics” was the number two choice at 11.76% for the in-service middle and high school teachers (along with the category “Other”).

The choice “Other” was 37.20% for pre-service teachers and 13.33% for elementary in-service teachers. For in-service middle and high school in-service teachers it was 11.76%.

Question 3: Who else uses ratios?

For question three the number one answer for pre-service teachers was “Teachers” at 21.21%. The in-service elementary teachers chose three different answers each at 23.08% value – “Scientists,” “Cooks” and “Business.” The in-service middle and high school teachers also had three different answers each at the 20% value – “Engineers,” “Business” and “Everyone.”

The category “Other” included 36.36% of the responses for pre-service teachers and zero percent for both groups of in-service teachers.

Question 4: How do you represent ratio using mathematical symbols?

For both pre-service and in-service teachers the number one answer to question four was the same – “Using ‘to’ or ‘:’” (as an example 5 to 4 or 5:4) with the values of 58.54% for pre-service teachers and 50% for both groups of in-service teachers. The second highest choice of “Fractions” was the same for both pre-service and in-service groups with values of 25.61% for pre-service and 14.29% and 40% for in-service elementary and middle school and high school respectively; the in-service elementary teachers also provided drawings.

The selection “Other” was 7.32% for pre-service teachers and zero percent for all the in-service teachers.

Question 5: Draw representations of how ratios are used.

The number one representation of how ratios are used varied between the pre-service and in-service teachers. The pre-service teachers specified the use of a colon as ____:____ with a value of 33.33% while the in-service elementary teachers chose “Combinations – Fractions, Percentage, the word ‘to,’ and use of colon” at 21.88%. The in-service middle and high school teachers provided written explanations, with a value of 27.27%.

The second highest choice for pre-service teachers was “Fraction” at 16.13% while that of in-service elementary teachers was the use of the colon ____:____ at 15.63%. The in-service middle and high school teachers also chose the use of the colon as ____:____ for their number two representation, with a value of 22.27%.

The category “Other” was 20.43% for pre-service teachers and only 6.25% for in-service elementary teachers and 9.09% for in-service middle and high school teachers.

Discussion

The work reported in this paper contributes to the project being run by the Science and Mathematics Education RDC (Research and Development Community) on teachers’ and prospective teachers’ understandings of *ratio*. The paper is the first to include study of in-service as well as pre-service or other prospective teachers. However, numbers involved are small, and it will be of interest to find if the results are replicated in larger studies.

A five-question instrument was used to collect data. In comparing the in-service elementary and secondary teachers’ responses to the questions, the findings were very similar to the earlier study comparing science and non-science students’ responses (Price 2013). The answers to questions one, two, four, and five were similar but the actual % values varied. For question one, “What does the term ratio mean to you?”, both elementary and secondary in-service teachers wrote “Comparison” or “Relationship.” For question two, “When do you use ratio?” the groups had similar responses, both favouring “Comparing” and “Mathematics.” Question three, “Who else uses ratio?” had different

responses between the two groups as the elementary in-service teachers selected “Business,” “Cooks” and “Scientists” while the secondary in-service teachers selected “Engineers,” “Business” and “Everyone.”

Question four, “How do you represent ratio using mathematical symbols?” had a slight variation in the answers between the elementary and secondary teachers. The elementary in-service teachers selected the use of the colon or the preposition “to,” and then “Fractions” and drawings equally. The secondary in-service teachers also selected “to” or the colon, followed by “Fractions” and then “Words only.”

The results from Question five, “Draw representations of how ratios are used” for in-service elementary teachers was combinations (fraction, percentage and “to” or colon) and colon, but for in-service secondary teachers it was written explanations and then colon.

It appeared from the responses of the in-service teachers that the elementary teachers had more diversity in their answers than the secondary teachers. Perhaps after teaching in a specific area the secondary teachers were more focused on their particular area therefore had a more narrow range in their selections.

Information gained from this study could be used by teachers in the mathematics and science courses required for the Science Majors to include numerous examples of how ratio is used and by whom. Teachers in the schools of education need to continue giving the broad explanations of who uses the term “ratio” and how it is used so that the pre-service teachers will be prepared to explain this term and use it to the benefit of their students.

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Appendix I

Survey on Ratio

We are conducting an international study with Ireland and Portugal concerning pre-service and in-service teachers' ideas of ration. You do not have to put your name on this paper. We will use your ideas to inform teacher educators from around the world who attend the annual conference of the Association of Teacher Educators in Europe next summer. Many thanks for your cooperation.

What does the term "ratio" mean to you?

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When do you use ratios?

Who else uses ratios?

How do you represent a ratio using
Mathematical symbols?

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|
|
|

Draw several representations of
how ratios are used.

Circle all that describes you, your level, and your concentration: pre-service teacher or in-service teacher, elementary, middle, or high school? Mathematics, science, or other?

Appendix II

Comparison of Science Majors' and Non-Science Majors' Responses

Question 1: WHAT DOES THE TERM "RATIO" MEAN TO YOU?

GROUP I			GROUP II		
Science Majors	%		Non-Science Majors	%	
N=45 Responses (37 participants)			N= 67 Responses (64 participants)		
Comparison	23	51.11%	30	44.80%	
Relation/ Relationship	8	17.78%	8	11.80%	
Percent	1	2.22%	7	10.30%	
Fraction	2	4.44%	2	2.90%	
Proportion	6	13.33%	0	0.00%	
Others	5	11.11%	20	29.40%	
Total	45	99.99%	67	99.98%	

QUESTION 2: WHEN DO YOU USE RATIO?

N= 61 Responses (37 participants) participants)			N= 113 Responses (64		
Mathematics	21	34.40%	28	24.78%	
Science	11	18.03%	7	6.19%	
Recipes/ Cooking	2	3.28%	4	3.54%	
Comparing	6	9.84%	26	23.0%	
Statistics	3	4.92%	2	1.77%	
Coaching/ Sports	3	4.92%	0	0.0%	
School	3	4.92%	3	2.65%	
Punnett Sq.	3	4.92%	1	0.88%	
Other	9	14.75%	42	37.20%	
Total	61	99.98%	113	100.01%	

QUESTION 3: WHO ELSE USES RATIOS?

N= 72 Responses (37 participants)			N= 99 Responses (64 participants)		
Accountants	2	2.78%	2	2.02%	

Statisticians	4	5.56%	6	6.06%
Teachers	5	6.94%	21	21.21%
Engineers	2	2.78%	4	4.04%
Mathematicians	11	15.28%	6	6.06%
Scientists	13	18.06%	11	11.11%
Sports	1	1.39%	0	0.00%
Cooks	3	4.17%	2	2.02%
Business	5	6.94%	6	6.06%
Doctors	4	5.56%	0	0.00%
Politicians	2	2.78%	0	0.00%
Students	2	2.78%	3	3.03%
Surveys	2	2.78%	0	0.00%
Geneticists	2	2.78%	0	0.00%
Everyone	7	9.72%	2	2.02%
Other	5	6.94%	36	36.36%
No Answer	2	2.78%	1	1.01%
Total	72	100.02%	99	101.00%

QUESTION 4: HOW DO YOU REPRESENT RATIO USING MATHEMATICAL SYMBOLS?

N=55 Responses (37 participants)			N=82 Responses (64 participants)		
Words only	3	5.45%	2	2.44%	
Fractions	16	29.09%	21	25.61%	
Percent	1	1.82%	4	4.88%	
Using "to" or ":"	32	58.18%	48	58.54%	
Drawing	1	1.82%	1	1.22%	
Other	2	3.64%	6	7.32%	
No Response	0	0.00%	0	0.00%	
Total	55	100.00%	82	100.00%	

QUESTION 5: DRAW REPRESENTATIONS OF HOW RATIOS ARE USED.

N= 64 Responses (37 participants)			N= 93 Responses (64 participants)		
Fraction	14	21.88%	15	16.13%	
Percentage	1	1.56%	0	0.00%	
Word "to"	2	3.13%	11	11.83%	
___ :___(colon)	27	42.19%	31	33.33%	
Dashes/Slashes	2	3.13%	0	0.00%	
Drawings:					

Boxes	0	0.00%	3	3.23%
Circles	4	6.25%	9	9.68%
Stick fig.	2	3.13%	1	1.08%
Diamonds	1	1.56%	1	1.08%
Molar/ Proportion	5	7.81%	2	2.15%
Other	2	3.13%	19	20.43%
No answer	4	6.25%	1	1.08%
Total	64	100.02%	93	100.02%

Appendix III

Comparison of In-service Elementary School and Middle/High School Teachers' Responses

Question 1: What does the term "ratio" mean to you?

Elementary N=Responses 9, Participants 10

Secondary N= Responses 10, Participants 6

	In-service E/S		In-service MS/HS	
		%		%
a. Use of the word "compare or comparison."	3*	33.33%	7	70.00%
b. Use of the word "relation or relationship." 00.00%	3	33.33%	0	
c. Percent or percentage. 00.00%	1*	11.11%	0	
e. Fraction	1*	11.11%	0	00.00%
d. Part/Part or Part/Whole 00.00%	1	11.11%	0	
e. Any other term (14 different terms.) 30.00%	0	00.00%	3	
	Total Responses		9	99.99%
				10
				100.00%

Numbers with an asterisk (*) was from one participant who gave all three answers.

Question 2: When do you use ratio?

Elementary N= Responses 15, Participants 10

Secondary N= Responses 17, Participants 6

a. Mathematics [grades] 11.76%	2	13.33%	2	
b. Science 00.00%	1	6.66%	0	
c. Recipes/cooking 35.29%	2	13.33%	6	
d. Coaching/training 00.00%	2	13.33%	0	
e. Comparing 41.18%		3	20.00%	7

00.00%	f. Statistics	2	13.33%	0
00.00%	g. Scales	1	6.66%	0
11.76%	f. Other (24 different terms)	2	13.33%	2
99.99%	Total Responses	15	99.97%	17

Question 3: Who else uses ratios?

Elementary N=13, Participants 10

Secondary N=10, Participants 6

	a. Accountants	0	00.00%	0	00.00%
	b. Statisticians	0	00.00%	1	10.00%
	c. Teachers	1	7.69%	1	10.00%
	d. Engineers	0	00.00%	2	20.00%
	e. Mathematicians	1	7.69%	1	10.00%
	f. Scientists (includes medical areas)	3	23.08%	1	10.00%
	g. Business	3	23.08%	2	20.00%
	h. Cooks	3	23.08%	0	00.00%
	i. Everyone	2	15.38%	2	20.00%
	j. Other (19)	0	00.00%	0	00.00%
100.00%	Total Responses	13	100.00%	10	

Question 4: How do you represent a ratio using mathematical symbols?

Elementary N=13, Participants 10

Secondary N=10, Participants 6

	a. Words only	1	7.14%	1
10.00%				
	b. Fraction	2	14.29%	4
40.00%				
	c. Percent or Percentage	1	7.14%	0
00.00%				
	d. Using ____ to ____ or ____: ____	7	50.00%	5
50.00%				
	e. Drawing	2	14.29%	0
00.00%				
	f. Nothing	0	00.00%	0
00.00%				
	g. Other (5)	0	00.00%	0
00.00%				

Total Responses	13	100.00%	10
		100.00%	

Question 5: Draw several representations of how ratios are used.

Elementary N=32, Participants 10

Secondary N=22, Participants 6

a. Fractions	4	12.50%	2	9.09%
b. Percentage	1	3.13%	0	
		00.00%		
c. Words ____ to ____	3	9.38%	1	
		4.55%		
d. _____:_____	5	15.63%	5	
		22.73%		
e. Above a + b+ c or +d	7	21.88%	2	
		9.09%		
f. Drawings:				
i. Boxes	1	3.13%	1	
		4.55%		
ii. Circles	1	3.13%	0	
		00.00%		
iii. Boxes and circles	1	3.13%	0	
		00.00%		
iv. Stick figures	1	3.13%	1	
		4.55%		
v. C + D	2	6.25%	0	
		00.00%		
vi. Diamonds	0	00.00%	0	
		00.00%		
vii. Other (5)	2	6.25%	2	
		9.09%		
viii. Nothing	0	00.00%	2	
		9.09%		
g. Written explanation	4	12.50%	6	
		27.27%		
		100.01%		
	Total Responses		32	100.04%
				22

Appendix IV

Comparison of Pre-service Teachers' and In-service Teachers' Responses

Question 1: WHAT DOES THE TERM "RATIO" MEAN TO YOU?

<p>GROUP II Non-Science Majors (Pre-service) N= 67 Responses R (64 participants) P</p>	<p>GROUP III In-service ES* N=9 R/10P*</p>	<p>In-service MS/HS* N=10R/7P</p>
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- ES=Elementary School, MS=Middle School, HS= High School R=Responses, P= Participants

Comparison Relation/ Relationship	30	44.80%		3	33.33%	7	70.00%
Percent	7	10.30%		1	11.11%	0	00.00%
Fraction	2	2.90%		1	11.11%	0	00.00%
Proportion	0	0.00%		1	11.11%	0	00.00%
Others	20	29.40%		0	00.00%	3	30.00%
Total	67	99.98%		9	99.99%	10	100.00%

QUESTION 2: WHEN DO YOU USE RATIO?

<p>N= 113 Responses (64 participants)</p>	<p>N=15R/10P</p>	<p>N=10R/7P</p>				
Mathematics	28	24.78%	2	13.33%	2	11.76%
Science	7	6.19%	1	6.66%	0	00.00%
Recipes/ Cooking	4	3.54%	2	13.33%	0	00.00%
Comparing	26	23.0%	3	20.00%	7	41.18%
Statistics	2	1.77%	2	13.33%	0	00.00%
Coaching/ Sports	0	0.0%	2	13.33%	0	00.00%
School	3	2.65%	1	6.66%	0	00.00%
Punnett Sq.	1	0.88%	0	00.00%	0	00.00%
Other	42	37.20%	2	13.33%	2	11.76%
Total	113	100.01%	15	99.97%	17	99.99%

QUESTION 3: WHO ELSE USES RATIOS?

<p>N= 99 Responses (64 participants)</p>	<p>N=13R/10P</p>	<p>N=10R/7P</p>				
Accountants	2	2.02%	0	00.00%	0	00.00%
Statisticians	6	6.06%	0	00.00%	1	10.00%
Teachers	21	21.21%	1	7.69%	1	10.00%
Engineers	4	4.04%	0	00.00%	2	20.00%
Mathematicians	6	6.06%	1	7.69%	1	10.00%
Scientist	11	11.11%	3	23.08%	1	10.00%
Sports	0	0.00%	0	00.00%	0	00.00%
Cooks	2	2.02%	3	23.08%	0	00.00%
Business	6	6.06%	3	23.08%	2	20.00%
Doctors	0	0.00%	0	00.00%	0	00.00%
Politicians	0	0.00%	0	00.00%	0	00.00%
Students	3	3.03%	0	00.00%	0	00.00%
Surveys	0	0.00%	0	00.00%	0	00.00%

Geneticists	0	0.00%	0	00.00%	0	00.00%
Everyone	2	2.02%	2	15.38%	2	20.00%
Other	36	36.36%	0	00.00%	0	00.00%
No Answer	1	1.01%	0	00.00%	0	00.00%
Total	99	101.00%	13	100.00%	10	100.00%

QUESTION 4: HOW DO YOU REPRESENT RATIO USING MATHEMATICAL SYMBOLS?

N=82 Responses (64 participants)			N=13/10P		N=10/7P	
Words only	2	2.44%	1	7.14%	1	
10.00%						
Fractions	21	25.61%	2	14.29%	4	40.00%
Percent	4	4.88%	1	7.14%	0	00.00%
Using "to" or ":"	48	58.54%	7	50.00%	5	50.00%
Drawing	1	1.22%	2	14.29%	0	00.00%
Other	6	7.32%	0	00.00%	0	00.00%
No Response	0	0.00%	0	00.00%	0	00.00%
Total	82	100.00%	13	100.00%	10	100.00%

QUESTION 5: DRAW REPRESENTATIONS OF HOW RATIOS ARE USED.

N= 93 Responses (64 participants)				N=32R/10P		N=22R/7P	
Fraction	15	16.13%	4	12.50%	2	9.09%	
Percentage	0	0.00%	1	3.13%	0	00.00%	
Word "to"	11	11.83%	3	9.38%	1	4.55%	
____:____(colon)	31	33.33%	5	15.63%	5	22.73%	
Above combined	0	00.00%	7	21.88%	2	9.09%	
Drawings:							
Boxes	3	3.23%	1	3.13%	1	4.55%	
Circles	9	9.68%	1	3.13%	0	00.00%	
Stick fig.	1	1.08%	1	3.13%	1	4.55%	
Diamonds	1	1.08%	0	00.00%	0	00.00%	
Molar/							
Proportion	2	2.15%	0	00.00%	0	00.00%	
Other	19	20.43%	2	6.25%	2	9.09%	
No answer	1	1.08%	0	00.00%	2	9.09%	
Written response							
27.27%	0	00.00%	4	12.50%	6		
Total	93	100.02%	32	100.04%	22	100.01%	

Teacher education and information technology

To be a competent documentalist - The experience of preservice educators of early childhood with the digital storytelling

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Abstract: Digital Storytelling (DST) stands as an instrument able to make true the process of metacognition and self-education and to implement the “autobiographical professional intelligence”. In fact the story, in the sense of narrative, is more powerful than the events themselves and it represents the essential medium created by the mind to frame these events and explain them searching for a logical sense (Petrucco & De Rossi 2009). In 2011/12 a path to develop competences in digital narrative documentation has been proposed to 66 students of the bachelor’s degree in Education and training, above all through a workshop of DST which enabled the students to document some activities with children. The project would like to “follow” the idea of a University where professional competences can be built through authentic tasks which allow the students to apply the skills and the knowledge they have mastered” (technological, documentative, pedagogical, educational) under real-life or simulated contexts (Wiggins 1993, McTighe & Ferrara 1996).

Keywords: digital storytelling, narrative documentation, laboratory, competence, authentic task

ICT in educational and teaching contexts: perspectives for the development of skills

The reflections on the use of information and communication technology (ICT) in an educational and teaching context have led to the development of theoretical studies and methodological analyses belonging to the area of education technology, with the aim of rethinking some teaching and learning models in order to identify innovative quality teaching approaches through the introduction of ICT in the professional practice (Anderson 2008). Attention focuses on their use as useful tools on the cognitive level (for research, production, revision and interaction with regard to the system of knowledge), as well as on the socio-cultural one (to promote the communication, development, sharing and exchange processes). It is therefore important to reflect on the educational contribution of the Multimediality, Interactivity and Virtuality features of these tools, thinking of their potential in terms of use and production (Galliani 2004) It is necessary to overcome the temptation to consider ICT only a technical vehicle, and open oneself to a

different way of thinking and living their integration in the teaching process itself (Koehler & Mishra 2009). For instance, it is necessary to choose the new technology critically, in order to be able to plan their conscious use in the education and teaching environments, which means that a teacher/educator must not only decide for one tool or another (what), but also when (e.g., for which daily activities) and why (that is, what are the goals to be reached consciously), without allowing the technology to drive the educational practice (OECD, 2011) It must be remembered that in the last few years there has been, also in Italy, a rapid dissemination of technology within the education and teaching institutions, especially thanks to the numerous applications and easy-to-use tools made available, which do not require specific computer skills and make even non-skilled users self-sufficient. This process has been further facilitated by the increasing number of local and European ministerial projects based on a specific regulatory and operating landscape that is also trying to promote the introduction and use of ICT in educational and teaching areas (for example, the consolidated CI@ssi 2.0 project or the Scuola Digitale - LIM6 project, etc.). All this requires an increased level of attention on the necessary digital skills of teachers and educators, as shown by the recent reference regulations. Among these, the most relevant is the Recommendation of the European parliament (2007) introducing digital skills as one of the eight key competences for lifelong learning that are useful for personal fulfilment and development, active citizenship, social inclusion and employment. This competence is described therein as "the confident and critical use of information society technology (IST) for work, leisure and communication. It is underpinned by basic skills in ICT: the use of computers to retrieve, assess, store, produce, present and exchange information, and to communicate and participate in collaborative networks via the Internet." The Italian national regulations refer to this Recommendation in Decree n. 249/2010 to "Define the rules, requirements and modes of the initial training of kindergarten, primary and lower and upper secondary school teachers". Article 3 - Formative paths, indeed, states (par. 4) that "the acquisition of the digital skills mentioned in the European recommendation is an integral part of the formative paths, in order to attain the goals of the initial training of teachers". The issue of the acquisition of digital skills by all professional educators, from social educators and cultural animators to kindergarten educators, is less defined in the regulations, but not less important in terms of work and research.

Digital skills in university training

From the preceding brief observations, it is clear that it is necessary to reflect and act with regard to the training of teachers and educators, in order to promote the learning of digital skills that may promote not only the use of ICT in a teaching context, but also the activation of activities for the building, development and critical research of technological, communication and methodological knowledge (Krumsvik 2008). The European recommendations state that, in order to use the information society technology confidently and critically also in educational and training areas it is necessary to "understand and

know the nature and role and opportunities" they offer also in the teaching area. Such understanding can be obtained only on the basis of the knowledge and use of the main computer applications and the numerous tools and environments offered by the networks (that is by the "ability to use"), so as to become able to "use ICT critically" for communication and information and knowledge sharing, in order to make the best use of their potential to support experiences, create environments and organise virtual communities for learning and research. It is important, therefore, to analyse the different levels of competency development and pedagogical efficacy: *Supported didactic* (support to traditional education), *Interactive* (development of the multimedia component integrating verbal, visual and aesthetic elements and languages), *Enhanced interactive* (interaction to involve students and teachers planning and producing together with interchange between teachers themselves) (Beauchamp & Kennewell 2008).

For many years now, teachers and researchers specialising in pedagogics and didactics, including at a national level, have been studying educational technology and, in particular, the now better defined digital skills (Messina 2012, Galliani 2009, Falcinelli 2009). The research on the didactic use of digital technologies has defined the concepts of technological innovation, digital skills and educational technology within the context of academic teaching more clearly and completely. Through experimentation, it has been possible to create more or less objective tools to carry out specific investigations on the social and cultural role of ICT in society and, with reference to this, to make hypotheses about the role of training and education. Also with regard to the learning of digital skills by teachers and educators, university research has led to a better definition of the required interaction between the teaching of technical and instrumental skills and the teaching of more specifically pedagogic and didactic competences and skills, which lead to a more confident and critical use of ICT also with regard to teaching-learning experiences (Petrucco & De Rossi 2012). In view of all this, it is important today to try and exploit the scientific knowledge acquired during the years in the course of educational experiences for educators and teachers as much as possible, in order to make new teaching proposals for the development of digital skills.

The goal here should be the structured transfer of pilot projects for the teaching of ICT skills into university syllabuses, and, in general, in the formative paths of teachers and educators, so as to renew the teaching of digital skills and promote the confident use of ICT by new education and training professionals. Only starting from an in-depth scientific knowledge and consolidated, long-term experiences it is possible to adopt innovative approaches that facilitate the dissemination of these skills and, above all, promote the potential of ICT also in the educational field. As already mentioned, the quality use, in a didactic sense, of the opportunities and tools offered by the new technologies and the Web 2.0 requires a critical and "reasoned" reflection on this issue and on the use of these technologies. For some years the various university Faculties and Departments that deal

with the training paths of teachers and educators have been including in their syllabuses classes and workshops dedicated to computer technologies, thus meeting the challenge of keeping abreast with the new learning training requirements of a society in full transformation which is often defined the society of knowledge and/or information.

However, the most interesting feature is the "contamination" that reaches also outside of the classes that teach the technologies, which promotes the practical experimentation with didactic models inspired by the cross-sectional integration of ICT with the contents. The experience described below is an example of an interdisciplinary workshop that joins two teachings not based on the knowledge of technologies (Planning and assessment and Methodology of play and animation), but which have integrated the training potential of technology to develop cross-sectional competences. We shall describe what can be defined as a "pilot" best practice for university didactics, so as to explain better the type of formative approach that is aimed at promoting the so-called digital skills in education. The arguments presented to date point to another important issue, namely, the assessment of digital skills with reference to the vast area of certification.

The discussion deals with the need for these skills to be "certified" and, to date, there are several entities and organisations that offer certificates issued in various formative (for instance, in schools or at university) and work (for instance, in refresher courses or lifelong learning programs) contexts. Reference here is made to the well-known national and international certifications such as ECDL (European Computer Driving Licence) and IC3 (Internet and computing core certification), which are international certificates proving the attainment of basic personal computer use skills, and, again, such as Eipass (European Informatics Passport), a computer certification program, based on an approved European level standard of competence. In the course of time, the promoters and certifying bodies have also offered different levels of training and certification, to assess computer literacy skills and that refer to the "ability to use" the main and most common computer tools for personal or professional use. In the education and training field, too, the issue of if and how to assess (Calani, Fini & Ranieri 2011) specific skills and competences and of the need to certify such skills is much discussed.

The same bodies and organisations that used to offer basic computer literacy courses now offer also specific courses for teachers and an European certification, EPICT (European Pedagogical ICT Licence), has been proposed to "define and certify the pedagogical ICT competences", pedagogical here meaning: "the ability to use the hardware and software tool to plan and manage innovative learning scenarios, and to use these technologies together with the students to attain both disciplinary and educational goals". Some examples of this are approaches and certifications such as Eipass Teacher or the IC3 and ECDL proposals for schools and teachers, which however, often include only contents pertaining to: installation, configuration, management, functions and use of

specific tools and software, and which therefore seem to refer to the training in and certification of specific, mainly technical competences and skills, without giving the necessary importance to how and in what measure these can actually be useful in the personal and social life and in the field of education.

To certify the important role that pedagogic and didactic studies can have in the teaching of competences, including digital skills, to teachers and educators, some universities have started to develop a digital skills training and certification program for teachers, school principals, educators, cultural operators and trainers through the organisation of an inter-university consortium. The work is still in progress and aims at promoting the specificity of digital skills in humanities areas²⁹. The purpose is to offer the opportunity to reflect on the promotion of specific training to allow school and non-school operators to acquire the necessary digital skills to fully develop the potential of ICT and activate customised didactic innovation processes in different context.

Developing documentation skills: or, relating educational and didactic experiences using ICT

Educational documentation is a fundamental element to characterise the planning and connected didactic processes. As for teachers in school, educators in kindergarten and child-care services, one of the most important resources is the knowledge and understanding of experiences from similar and/or related contexts. Documenting the practices is something that can, on the one hand, become "material that can give back to the main actors in the educational process (namely, those who live through the experience in kindergartens, schools, and educational structures in general) a memory of the experience", and on the other hand, communicate these experiences not only through the presentation of a final product, but also through the story of the evolution of the activity. In this sense documentation acquires both biographical and autobiographical characteristics regarding the actors in the process, and communication characteristics with regard to the wider community of people who make use of the experience.

The high relational potential of educational documentation makes it possible to reveal the experience to those who have not lived it, and make it understandable, transferring the experience beyond the starting context to promote its repeatability, development and re-elaboration, and to promote the circulation of ideas for reflection (Tognetti et al. 2011). Digital documentation skills become an element for the development of lifelong and lifewide learning. Indeed, information is considered essential for the effectiveness and efficiency of work activities of individuals and communities. It is a raw material that needs processing in order to be reintegrated, in the shape of training and self-training, in the production, management or educational processes, as it can produce added value for the basic activity, through the adopted practices (Raieli & Innocenti 2004). Today, the idea of

²⁹ VIII SIE-L National Congress, September 2011 (Italian e-Learning Society): "Connected! Innovative Scenarios in Training and Communication", Reggio Emilia, 14-16 September 2011: <http://www.siel2011.it>

documentation as narration includes new thoughts derived from theoretical research and technological development that identified the drive towards digital skills and the multiplicity of communication channels as two fundamental aspects of the new way to organise and transfer knowledge. In order to build documentation, and thus information, using the digital communication world it is necessary to adopt a change of paradigm: from a hierarchical (hard copy text) to an unstructured (digital text) approach. In this sense, documentation is a creative and flexible tool for the search for new languages and new communication models that can be useful for the development of a narration potential that can improve its effectiveness. The most recent studies attribute great importance to the narrative methodologies used as means for the development of learning and as documentation tools for the empowerment of developing subjects and communities (McDrury & Alterio 2003). The technological development process has facilitated the passage from a single medium to multiple media, from traditional narrative forms, which are by nature sequential, linear and closed, to a sensory, linguistic and technological integration of words, sounds and images. An excellent example of this is the Digital Storytelling (DST) technique, which entails the use of digital media to create media-rich stories to be told, shared and preserved (Lambert, 2007). The result is a brief story (maximum 5-8 minutes long), created with digital tools, that make it possible to express emotions and points of view with regard to a significant event.

The first studies focused mostly on the necessary characteristics and steps to create this kind of constructs. The main requirement was, indeed, to distinguish them from other multimedia products already in the net. Thus the seven fundamental elements that identify a DTS have been identified:

1. personal point of view;
2. narrative structure built on a dramatic question;
3. emotional and involving contents;
4. use of the voice to tell the story;
5. appropriate soundtrack;
6. brevity of the story;
7. rhythm appropriate to the chosen narrative mode.

The stories represent an "organising device" that compels one to order one's thoughts and organise them in a clear, understandable and communicable way. Telling a story is always a cognitive-reflexive action that requires higher thought skills, but it is also a dialogue (the narrative is always aimed at "another" who, according to context, may be an individual, a group or an "imaginary other" who is a projection of oneself or the personification of an issue/object) (Orr 1996).

From a documentation point of view, it is necessary to record complex activities and share the best practices. The power of this tool is that it connects two different worlds: the world of narration, reflexivity, interpretation and assessment on one side, and the world of new

media and innovative technological tools (computers, tablets, video cameras, camera and smart phones) on the other (Petrucco & De Rossi 2009).

An educational documentation collected using digital narration with the DST approach makes it possible to define several elements of the didactic action:

- the nature of learning processes and the cognitive/emotional strategies adopted by each child and by the group;
- the actions of the professionals in educational-didactic experiences;
- the choice and use of methods, techniques and tools used in the daily work;
- the social and cultural dimension of the educational actions carried out;
- the strategic choices and the purposes of action.

Interestingly, besides for internal use, as a self-assessment tool for educators, a "memory" for the service or a visibility and exchange opportunity within the professional practice community, digital narrations (DST, documenting) can also be used within the context of education for parenthood, and, above all, for the training of new educators.

Reference framework

The University of Padua has been working for several years to organise degree courses dealing with competences and learning results in compliance with the definitions of the Bologna process. More specifically, its pedagogy courses have been an example of good practice, thanks also to a very important regional project (Galliani, Zaggia & Serbati 2011).

In the three-year degree course in Education and Training, early childhood education branch, the teachers are trying to provide open and flexible teaching, using interactive didactics that actively involve the student in the professional training, paying particular attention to the real issues/contexts of their future profession and to personal fulfilment.

The degree course trains the future early childhood educators (also known as daycare educators), which in Italy refers to professionals caring for child education from 0 to 3 years of age. In our country, the people working outside the school are also called educators: there are social educators and cultural animators on the one hand (who work with children, young people and the elderly, bot at risk and not at risk) and professional educators on the other hand (who work in social and health care contexts when there is discomfort).

At a university level it was decided to study the issue of documentation as a metacognitive and reflexive process that the educator in training activates during internship activities required by the syllabus and that shall be a part of their cultural and professional knowledge when they start working. Documentation and digital narrative documentation in particular, requires careful planning, observation and analysis, and also a competent choice of the representation language/s. In this sense, it is possible to speak of a true

documentation skill applied to new technologies and communication that ranges across all didactic branches of knowledge.

The survey of the services

Before starting the work with the students, we decided to take a survey of the most frequent documentation approaches used in the child care services of the Veneto Region (North-East Italy) where the students had spent or were starting their internship. There are many different services that care for 12 to 60 children and can be public or private. We collected 85 filled in questionnaires. This survey was also the first step of the creation of a regional database on this kind of services. The questionnaire was filled in by the service coordinators, that is to say, those who manage the staff, the activities with the children and the organisation of these child care services. We gathered important information that reveals that documentation goes beyond the traditional activity of producing document for the certification and institutional accreditation of the structures in compliance with the regional regulations.

It is defined as a true research activity, as a tool to reveal thought processes and assess the work of the educators. Through the documentation, educators are able to develop self-reflection processes on their own work, to increase their professional expertise involving both the children and their families, as they increasingly ask for the support of the services in the global education of their children.

In this sense, the definition of documentation goes beyond the meaning of "record-keeping and display" of the activities and experiences with the children as a sort of finished product, and includes the concept of process, that better describes the development of the child and offers useful information for the educational assessment (De Rossi & Restiglian 2013).

Among the documentation tools used, the written text is preferred by most educators (educator log, child log, check list and information sheets on the routine followed by the child, assessment reports, notes on the meetings with the parents, notes on noticeboards), followed by manual work (drawings, small child-made objects, collages) and multi-media documents (pictures, videos), and in very few cases, by a digital approach.

The work with the students

We worked with university students for two consecutive academic years, in 2010-11 and 2011-12. In the first year we chose to work only with third-year students who were attending the Methodology of play and animation course, while in the following year we extended the project to two successive years of the degree course, involving the Educational planning and assessment course (second half-year of the second year) and the Methodology of play and animation (first half-year of the third year). For the purposes

of this work, we concentrated on the modular program of the two years that led to the production of 66 DST.

The structure of the course is described here.

Second year

- prerequisites: at least three-week experience with a child care service, and having followed some theoretical documentation lessons
- filling in of open questionnaire to make it possible to assess the student's perception of the use of web 2.0 technology, narrative methodology and digital storytelling
- construction of a digital storytelling "prototype".

Third year

- workshop on the creation of a digital storytelling
- creation of a digital storytelling documenting one activity with the children
- filling in of an assessment sheet on the DST creation and on its evaluation from different points of view, namely, the narrative structure, the contents and the technology
- administration of a quantitative sheet to the child care services coordinators with whom the DST was created.

In particular, we are interested in talking about the workshop that took place at the beginning of the third year of the degree course and about the immediately following phases. Indeed, we consider the workshop as an essential passage for a university teaching that works on the building of professional competences starting from an active role of the student that is open to different work opportunities. The workshop is conceived as a sort of "mental space" even before it becomes a "physical" one, a space in which the student can be, think, build, try, share and process things (Restiglian 2008). In the workshop students could do this, testing their theoretical knowledge, computer skills, and design and research skills.

The workshop

The workshop included a warm up step and four other steps spread out between the second and third year of the degree course.

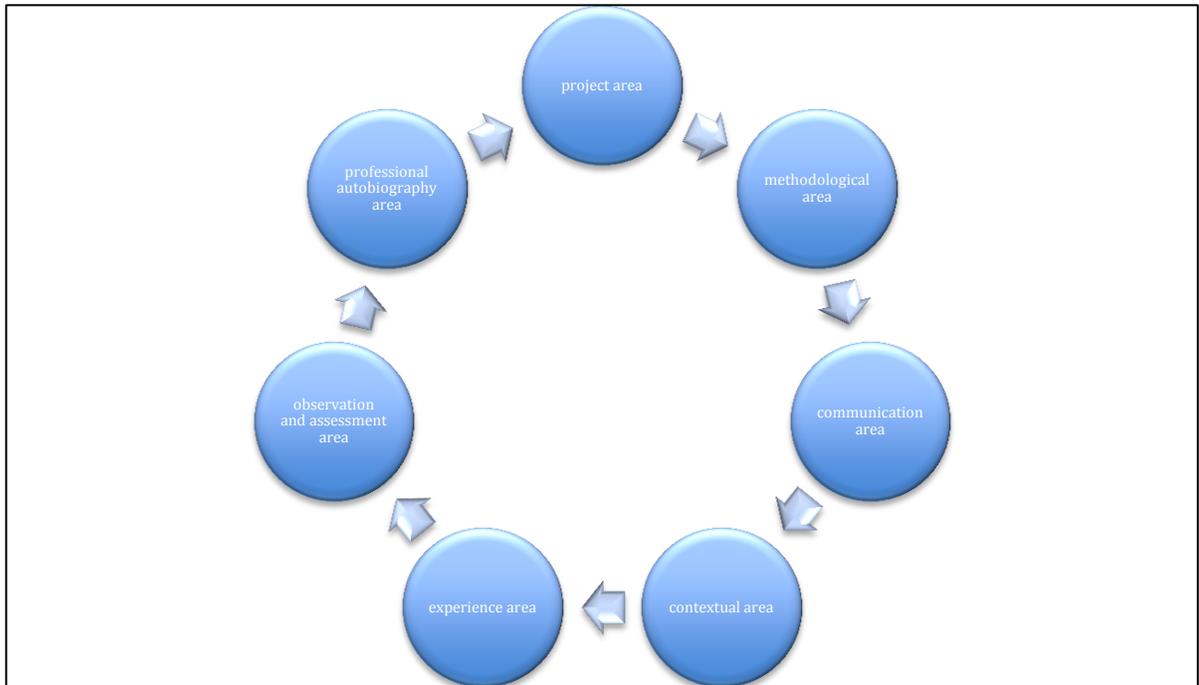
Step 1, the warm up. We proposed to some individual and group professional activities to induce reminiscent, reflective and analytical processes with respect to events that have characterized the observative experience of stage. We used for example some questions: What did you see? What did educators do? What tools did they use? Did they use some drafts? What was the function of the documentation? What was its target?

Step 2 was the step of the autobiographical narration of the stage experience. From an oral narration we switched to the creation of an iconic storyboard. Students recognized that if you don't have a draft or a trace in which insert templates, forms or observations you can't document. Students who collected materials like photos, notes or other things worked much easier than the others.

During the third step students built the DST with materials they had collected during their first period of stage. It was a sort of prototype and a multimedia writing of a story. They had to do a final selection of images, words (for example, key words, parts of the speech, metaphors), music and overall assembly of the different parts.

Then each student returned to stage (practicum) to plan an activity. During this second part of the stage he/she built the storyboard according to six semantic areas. All these areas should be present in documentation. They are:

1. *project area* (analysis of needs, feasibility, goals) This is the project synthetic description area, that outlines the experience to be documented;
2. *methodological area* (techniques, strategies, management). This is the methodology, work tools, strategies and experience management description area. The theoretical inputs and choice justification are important at this point;
3. *communication area* (target for the documentation, foreseen use, communication supports, tools) This is the area in which the documentation is communicated internally and externally;
4. *contextual area* (spaces, schedules, organisation, resources, target) This is the area of the description (visualisation) of the context and the environment in which the experience is taking place. It includes theoretical recall of choice justification;
5. *experience area* (activities, contents). This is the area of the description of contents and of the educational activities carried out, with specifics of the various phases and/or meetings;
6. *observation and assessment area* (schedules, tools) This is the area in which the observation methods and tools are described and includes an explanation of the assessment process/result indexes;
7. *professional autobiography area* (reflection on the experience, self-assessment, re-planning) This is the area where the educator's or educator team's point of view is described. Strengths and weaknesses, criticalities and resource streamlining are highlighted here. The self-assessment concerns the choices made, the results obtained and one's own role in the whole process.



Picture 1: Semantic areas for educational documentation (De Rossi & Restiglian 2013).

Going through all seven semantic areas (Picture 1) makes it possible to collect a complete documentation that can track the activity, the process that led to the creation of a product or the attainment of a result, highlighting the participation and contribution of the children and their global and individual development (cognitive, motion, social) as individuals and as interacting members of a group. To do so it is essential to define the used methodologies, as well as the space and time context, the recipients of the documentation (parents, children, financing bodies, management bodies, ...) that require six different levels of use of the observation and assessment tools, with the documentation collected for colleagues or coordinators and pedagogues being much more specific, for instance. Another aspect connected to the role of educator in the professional autobiography, which is meant to be a reflection and self-assessment of one's own experience, which are essential elements for the fine-tuning of an ongoing activity and for the planning of further proposals.

The storyboards were controlled by the Professor and then students did the “real” DST (online).

The last step was the one of web writing. The DSTs were posted on the network using an open space limited to the group of participants and closed to others. Later a self-assessment assignment was carried out followed by an exchange of the finished products

and ended with an evaluation conducted in small groups (debriefing) that was supported by filling out the quantitative forms.

The assessment

Until now, our work has been based on the existence of documentation skills, meaning the capacity of drafting a digital narrative documentation. Among the various definition of competence, we chose the one meaning "the proven ability to use knowledge, skills and personal, social and/or methodological abilities, in work or study situations and in professional and personal development (Recommendations 2008/C 111/01), which further means the use of personal resource, rather than the resources themselves, the ability to act in a given situation or context in order to obtain a performance on which other subjects shall be called to express an opinion (Le Boterf 1994).

In order to assess a competence, therefore, it is not possible to refer only to the possession of knowledge, basic skills and attitudes, it is also necessary that such qualities are used in contexts that require a performance. This performance cannot coincide with a skill, but it can be an indicator thereof, and we considered the ability to create a digital narrative documentation (DST) an indicator of documentation skills.

This is why, after a written test of the knowledge of documentation at the end of the second year, (Educational planning and assessment course), in the third year the students were asked to produce a digital narrative documentation, namely, digital storytelling (Methodology of play and animation course), as a true and authentic task (Wiggins 1993, McTighe & Ferrara 1996) which at the same time is also a complex task, as it requires the application of multiple skills and knowledge (technological, documentary, pedagogic , educational) learned during the course of studies in different courses.

Complex does not mean complicated. A complex task should motivate students and help them learn how to manage concrete, real life situations using their knowledge and skills to develop something new. The choice of a task that would involve multiple learning dimensions for the student was not meant to cause problems for the students, but, rather, to help them apply what they had learned.

An authentic task puts the student inside a real-life situation, in our case the world of child care services, where the documentation has several functions, for instance, to evaluate the proposed activities and the children (De Rossi & Restiglian 2013, 146), which is the basic stepping stone of the educator professional figure that should emerge at the end of the degree course.

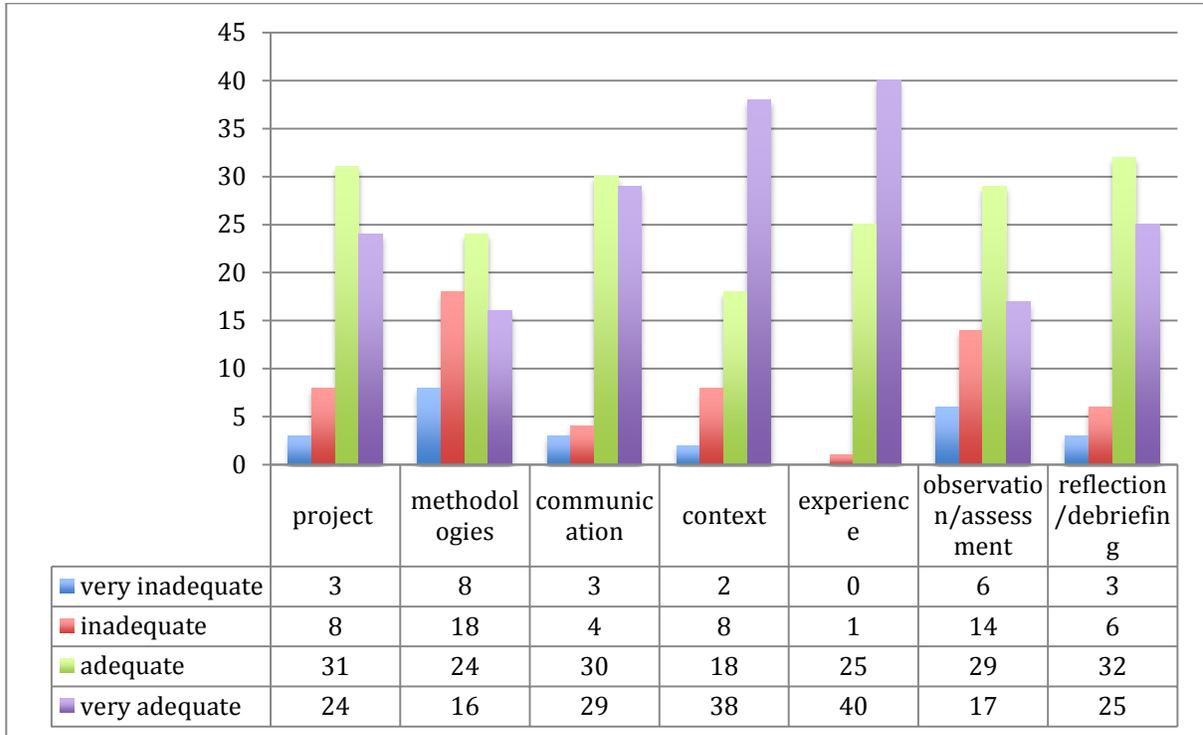
Digital storytelling made up for 30% of the overall assessment for the Methodology of play and animation course, next to a written test on the course subjects. Some specific criteria were defined for the assessment of the digital storytelling, namely:

- adequacy of the contents
- presence of all seven semantic areas
- adequacy in the use of the tools and software for the production of the digital construct.

Again with regard to the assessment, we worked within a theoretical framework that takes into account several points of view: the objectivity of the professor who evaluates the product, the subjectivity of the producer of the digital construct (the student, as a form of self-assessment) and the inter subjectivity of the recipient of the digital construct (in this case, the coordinator of the child care service where the student spent their internship).

In this way we tried to join the traditional role of the teacher as evaluator with that of an active student able to carry out a metacognition process concerning their own work, which is still not very usual in Italy. Moreover, inter subjectivity was guaranteed by the assessment of the person who supervised the student's work during the internship and who is therefore able to assign an effectiveness value to the digital storytelling with regard to the reference work context.

The authentic task approach has been successful, on the whole. Some difficulties emerged in two areas: the methodological area and the observation/assessment area (Picture 2), in which there are lot f students who received lower grades (inadequate, adequate). The grades for the description area are definitely better. Indeed, students often include in their documentation the actions and activities they carried out without considering other components, such as assessment and methodology, that require a reflection on one's own actions and references to precise theoretical aspects found in the literature and discussed in class.



Picture 2: Results of the authentic task.

Conclusions

Below are some conclusions that are to be considered provisional, at best, with regard to the work done, which can continue, with similar modalities, in the degree course but also in other courses for the training of different professional figures.

This experience is useful in the work life, thanks to the learning of digital, documentation and communication skills. We believe that this is an important feature for the University of the Future.

The experience is useful for pedagogic studies that aim at training competent educators and, above all, citizens that look at their future without fear, conscious of their personal value and of the skills they have learned and able to modify their knowledge, skills and attitudes every day, according to the specific context in which they are working.

Finally, this formative path is very useful for our work as university teachers, as it provides important stimuli and information on how to structure class work with the students in the next few years, in order to make students active participants in their learning experience and, at the same time, keep offering high level training offers, maintain contact with the

reference stakeholders required by the Bologna process and the course accreditation processes.

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Students' participation in a Facebook group related to a university college course

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Abstract: The aim of this study is to gain insight in how a group of university college students use Facebook as a communication platform for practical and social means, as well as to share academic sources. The article describes student's use of Facebook as a communication platform as part of the teacher training program (PPUH) at Østfold University College. At the beginning of the year a closed Facebook group was established for the program, where the students freely could post messages, comments and likes. Lecturers and representatives from the administration have also been members of the group and have contributed in varying degrees, including answering questions and posting messages with practical and academic information. In this article we will summarise collected data about the students activity divided into 3 categories: academic, social and practical. This activity is also linked to data about the students. The results indicate, amongst other things, that students used the group for academic discussions and as a tool for solving practical problems. We also see that the number of students, who actually participated actively, was relatively low.

Keywords: Social media, Facebook, students

Introduction

Social media has gained an increasingly more important part of our everyday lives. Today we have more than 1 billion active Facebook users, September 2012 ([Number of active users at Facebook over the years 2013](#)) and ([Facebook 2013](#)) and 500 million Twitter accounts, June 2012 ([Dugan 2012](#)). Several sources ([Facebook 2013](#)) and ([Sponcil and Gitimu 2013](#)) claims that well over 90% of college and university students use Facebook.

We therefore wanted to see how Facebook could be used as a communication platform for practical and social purposes, and also for sharing academic articles regarding a program at a university college. A closed Facebook group was created for the 2012/2013 academic year where all students starting at the teacher training program at Østfold University College could join. The group was also open for lecturers and administration staff.

By collecting quantitative information about posts, comments and likes, we were able to gather the data that make up the basis for this article. This is further described in chapter 2 about data and methods.

The teacher training program runs over 1 academic year and is divided into 3 parts; practical /pedagogical study, vocational/academic didactics and practice placement. The Facebook group has only been linked to the subject of practical/pedagogic studyii. All the students have graduated from a university, college or vocational college.

The student group consisted on 2013-04-23 of 60 students, whereof 37 were female and 23 were male with ages ranging from 23 to 54. By the end of the project the Facebook group consisted of 53 students, 9 educators, 1 administrative employee and 1 external partner, making the total 64 members.

The staff's participation in the group was discussed underway, but a strategy for how they were to relate to the group was not established. The exception was that all messages that were published on Fronter (a Norwegian Learning Management System) should also be published in the Facebook group.

At the start of the year the students took part in a lecture about social media in general, and in cooperation with the students it was agreed that moderation would only be used if severe personal attacks were made, sensitive information from the placement schools were published or similar incidents occurred. It was never necessary to suspend utterances or members from the group.

Our starting point was influenced by an explorative attitude without any basic presumptions. We have throughout the project been very conscious of the fact that we only wanted to observe and quantitatively report the use of a social media. We have tried not to influence how, and when, the students act in the group. We have taken a conscious step towards this by trying to not be normative in our communication with students in the Facebook group.

We are very clear about the fact that observing only 1 group of students will not provide results that with certainty are valid in general. The results in this article must therefore be seen as what it is, an observation of a limited number of individuals. Deriving from the overarching wish to discover how students use a Facebook group like this, we have formulated the following problem with following main research question:

How does a group of university college students use Facebook as a communication platform for practical and social means, as well as to share academic sources? In order to get an answer to this we have developed following questions to be answered:

When are students active in the Facebook group, and how does this vary over time, concerning content (social, practical, academic)?

What type of content creates activity in the forms of comments and likes?

How is the activity distributed in the student group?

Is there correlation between the characteristics of the participants, in relation to gender and Facebook competence, and level of activity?

There has been conducted several surveys on how social media, and Facebook in particular, is used, who uses them and what positive and negative effects they have. The literature ranges over a vast field of expertise with contributions from information technology, psychology, communication, pedagogical studies and many more.

In our search for literature we have not been able to find any works that focus on conducting quantitative analyses of a closed Facebook group used as a communication- and sharing platform in higher education. We have however been able to find some works that look at activity levels and influential factors in general. Several works look at which demographical characteristics Facebook users have, and which users are most active. McAndrew and Jeong (2012) finds that women, singles and young people are the most active users. Nevertheless these 3 factors are not possible to tie together because being single might have great effect on men's use of Facebook, but little effect on how much women use it.

Several scientists have tried to connect the use of Facebook to an average day of study for students. Neither Lubis et. al. (2012) nor Martin (Martin 2009) are able to find a correlation between students time spent on Facebook and the results they accomplish at respectively Universiti Kebangsaan Malaysia and University of New Hampshire. Junco (2012) also finds that there is no correlation, and that for many Facebook activities there is a negative correlation between Facebook use and how engaged a student is.

Hewitt and Forte (2006) shows that faculty employees create Facebook profiles as a way to connect and create relations with their students. Many of the students were members of closed groups but participated little, or not at all. This also included groups which aimed at discussing and sharing more serious topics, or groups where the members shared the same interests to start out with. Hewitt and Forte claims that students are more reluctant to participate because they are worried about how they will come across to their lecturers and how they want to shape their own digital identity.

Our research does not look at Facebook activity in general, but specifically at the activity in a group related to the program.

Data and methods

In order to be able to easily conduct processing of data, all information from the group, and the information about the members were collected from Facebook using Graph APIiii and put in a database.

The following data was possible to extract using Graph API

Post: id, from (id for person), caption, link, picture, type, updated_time, message and created_time

Comments on a post: id, from (id for person), like_count, message and created_time

Likes on a post: id (for person)

Person: id, name and gender

In addition to data collected directly from Facebook, information about every student was collected manually and through a digital surveyiv answered by 40 students. This information was then connected to the rest of the data via the student's names.v :

Survey: Name, general level of activity on Facebook (1-5, 1 being very low) and use of Facebook on smartphones.

Manually gathered/registered: When the users registered (date) in the group and which users of the groups who were students and employees.

In our handling of the data we have been inspired by Grounded Theory ([Corbin and Strauss 2008](#)). Our purpose was to explore the subject: "students participation in a closed Facebook group". Our source for information was the students posts on Facebook, and after time we developed conceptual categories based on what we observed. As the project progressed the amount of data increased in the form of posts with comments and likes, and the categories began to take on a fuller shape. With this flow of new data the categories took on distinct forms, and we realized they could be divided into the following 3 categories, based on content:

Academic: Something contributing directly to students learning. This could be the sharing of links or continued discussions based on lectures. We have not looked at its quality or relevance to the academic subjects.

Practical: Something involving everyday life as a student, i.e. questions about what time they have to meet, reading lists or driving together to practice placement schools.

Social: Something regarding the relations between the students and between students and lecturers, i.e. wishing everyone a good weekend or making arrangements for parties.

The gathering of data started when the group was created 2012-08-13 and was finished 2013-06-06 (the day after the last exam). We have chosen to keep posts/comments/likes that had been deleted by the users during the course of the data gathering.

Results

Based on the data collected we could extract a range of different statistics. We have in this article chosen to limit ourselves to statistics involving activity over time per user, demographics and content. It is important to point to the fact that all of the results are

aggregated throughout the academic year, and the levels of activity could have looked different if we had looked at only specific parts of the year. The relatively low number of users also contributes to the fact that the results cannot be interpreted as widely applicable.

Of a total of 53 students, 23 joined the group on the same day (Thursday week 34) as it was introduced to them. After the first week the group consisted of 34 students. The next week the number went up to 43, and during the third week it was up to 45 students. An extra 5 joined during the first 6 months, and the last 3 joined in respectively April, May and June.

Activity distributed over time and based on content

Group	Number of	Posts	Comments	Likes
Students	53 (83%)	259 (65%)	875 (79%)	1024 (81%)
Staff	11 (17%)	137 (35%)	232 (21%)	245 (19%)
Total	64	396	1107	1269

Table 1: Posts, comments and likes distributed between students and staff

The figures from table 1 shows that staff accounted for 35% of posts, 21% of comments and 19% of likes, this in spite of the fact that they only accounted for 17% of the total number of users. If one also take into account the fact that only 2 (educators) of the 11 members of staff were accountable for the majority of activity in the group of employees, we see that the production of content is not evenly distributed.

As mentioned in chapter 2 all posts are manually distributed to a category based on content, and can therefore be broken down into academic, practical and social. Figure 1 shows students posts within each category over time, and figure 2 summarises the distribution over the whole academic year.

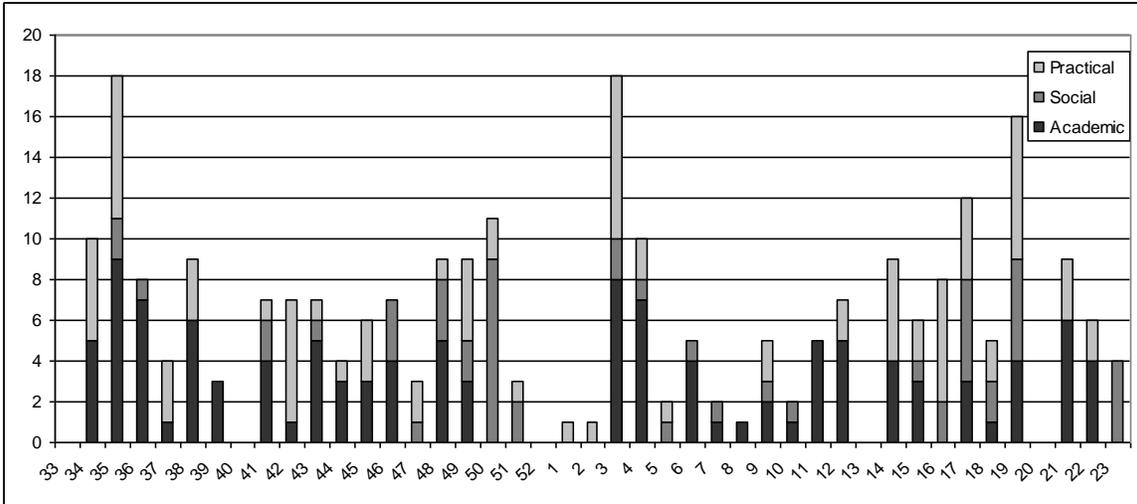


Figure 1: Students' posts distributed based on content, grouped by number of week.

In some periods the level of activity decreases a lot, and some of these anomalies can possibly be explained by events in the academic year. Examples of this are week 40, 52, 1 and 8 when the schools have their holidays. In week 20 the low level of activity can possibly be explained by the fact that the students had just handed in an exam paper which in return explains the level of activity in week 19.

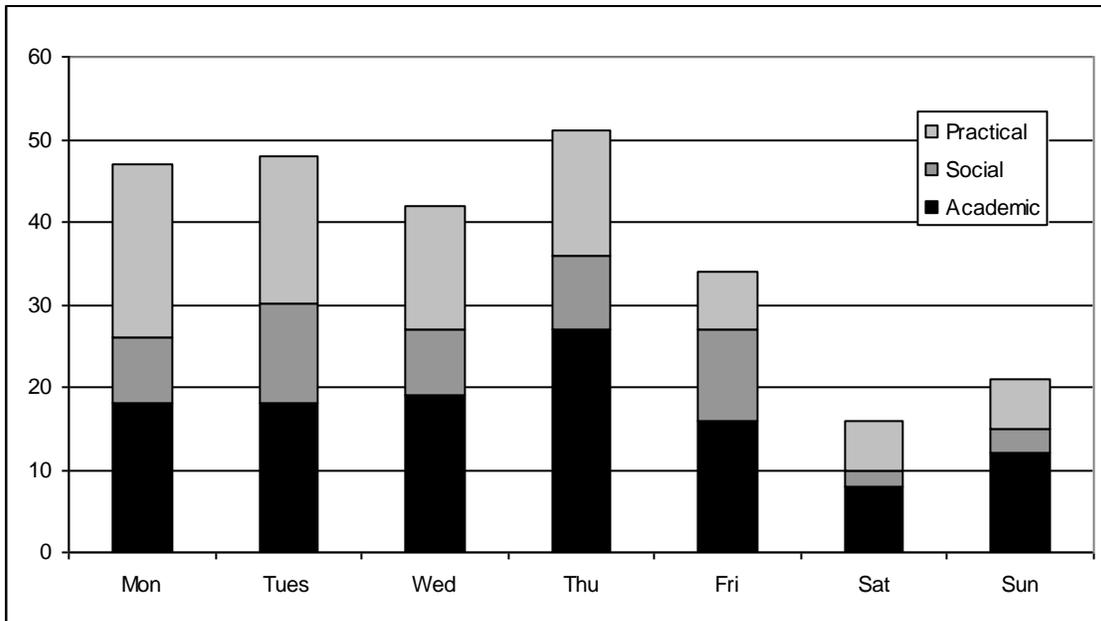


Figure 2: Students' posts distributed based on content, grouped by day of the week.

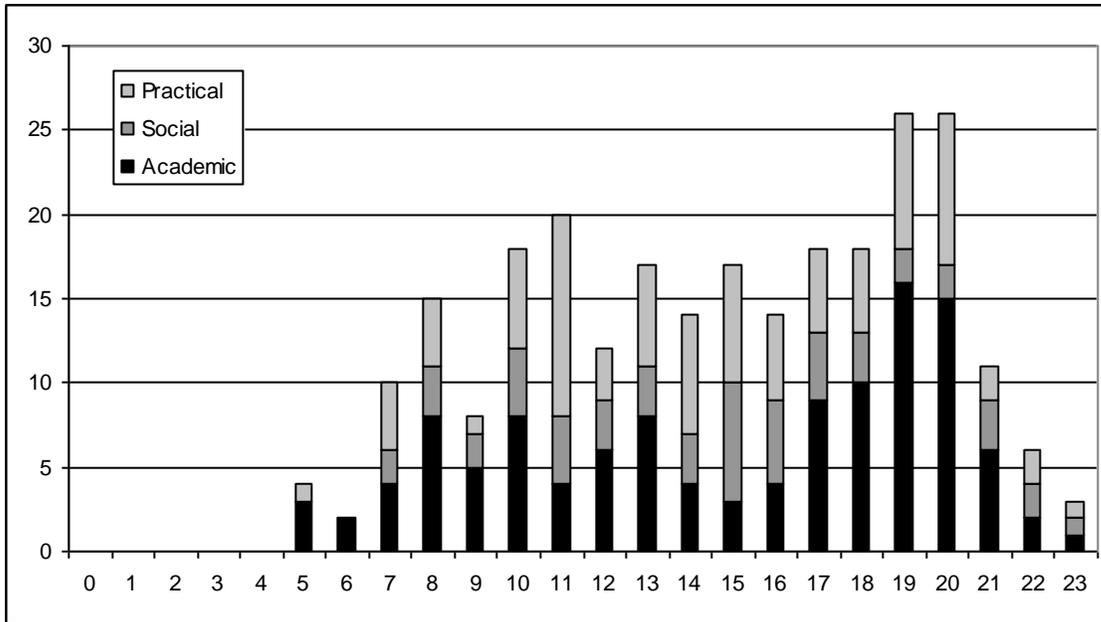


Figure 3: Students' posts distributed based on content, grouped by time of day.

Academic	Social	Practical	Total
118 (46%)	53 (20%)	88 (34%)	259

Table 2: Students' posts distributed in categories; academic, social and practical.

We see that activity in the group is relatively low during the whole of the second practice placement period (divided over week 5-7 and 10-13). This differs from the first placement period (week 42-46) when the level of activity was higher. During the practice placement periods the students are out in schools teaching under supervision.

The activity level amongst the students was relatively high even from the start in week 34, and remained on a high level in the periods where they were on campus.

The share of posts with an academic content was high from the start in week 34. Because of the low amount of posts every week, it is not possible to establish any causes for the difference between the different types of posts. Nevertheless we can say that in weeks 37, 42, 47, 50-2, 5, 16-20 and 23 there were less posts with an academic content.

The low levels of activity in week 42 and 5 might be because they were starting their practice placements, whilst in weeks 47 and 14 the students were coming back to campus after finishing their practice placements. The students had Christmas holiday in week 50

and 2. The high share of social posts in week 50 might have been caused by the fact that one of the students was in an accident. From week 16 to 20 the students were writing their exam paper, and the first 3 days of week 23 were used for oral exam.

We have also grouped activity after what day of the week it was and time of day. This is shown in figure 2 and 3. The students were on campus Tuesdays, Wednesdays and Thursdays, and had study days on Mondays and Fridays. We can also see that there was activity during the weekends, even though Saturdays and Sundays accounted for a lesser share of the posts.

Post type	Number	Average comments	Average likes
Academic	160	1.7	2.4
Practical	164	2.2	1.5
Social	72	3.4	5.6

Table 3: What type of response do the different types of posts receive from the students?

Table 3 shows the response the different types of posts received in the form of comments and likes from the students. We see that social posts received most attention from students with regards to both comments and likes.

Activity distributed on users

In addition to the total activity in the Facebook group, we have chosen to look at how the activity was distributed on the different members. We have also looked into how the different members contributed with posts, likes and comments.

By ranking the members from most to least activity, we can get a clear picture of the activity. This is shown in figure 4, where we can see that 7 members did not contribute with neither posts, comments nor likes during the academic year.

How much the students have read of the posts and comments have not been measured. That does not necessarily mean that students who have not been active have not gained anything from being part of the group.

.Further calculations of the data show in figure 4, indicate that only 10 of the groups' most active members were responsible for 50% of activity, and that the least active half of the group was responsible for only 10%. The less active students contributed for the most part with likes.

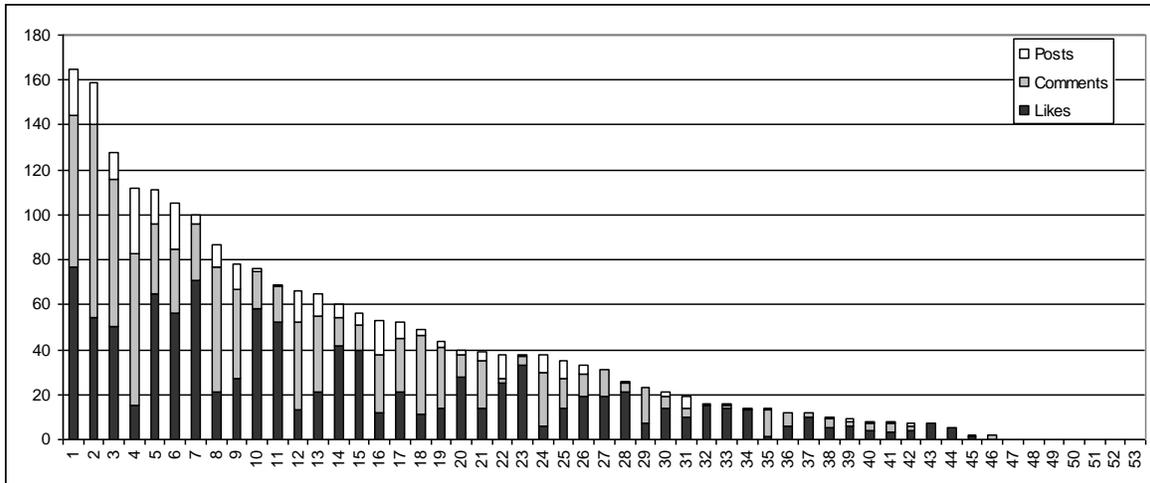


Figure 4: Distribution of each student's activity, from most to least active.

Activity distributed based on students characteristics

By linking activity levels from Facebook to the data gathered through the Facebook profiles and the survey, we are capable to determine whether certain characteristics can tell us something about students' levels of activity. 13 students did not take part in the survey and are therefore reported as 'unknown'.

We wanted to see if there were any correlation between student's own perception of activity on Facebook in general and their actual activity in this closed group. The results in table 4 show a clear correlation between activity levels in the group and general Facebook use. Those who categorised themselves as not very active in general, had activity levels around 20% of the levels of the most active students.

Most of social media services are adapted to through mobile devices, and in table 6 we can see activity in relation to whether or not the student uses Facebook on a smartphone. We can see that 72.5% of the students who answered the survey uses Facebook on their smartphones, and this group was almost three times as active as the ones who did not use Facebook on their smartphones, especially when it comes to the number of comments and likes.

If we look at the same distribution, but with a focus on gender, we see in table 5 that activity levels for women were almost double as high as for men.

Facebook activity	Number	Average posts	Average comments	Average likes
Unknown	13	2.0	6.5	13.5
1 –Not very active	6	1.7	9.7	6.3
2	7	1.3	6.1	18.6
3 – Middle	10	4.2	11.3	15.7
4	14	8.1	29.8	30.4
5 – Very active	3	19.3	53.0	32.7

Table 4: Distribution based on general Facebook activity.

Sex	Number	Average posts	Average comments	Average likes
Female	34	5.9	20.4	24.4
Male	19	3.1	9.5	10.3

Table 5: Distribution based on members' gender.

Facebook on smartphone	Number	Average posts	Average comments	Average likes
Unknown	13	2.0	6.5	13.5
No	11	3.5	8.2	8.6
Yes	29	6.7	24.1	26.0

Table 6: Distribution based on whether or not Facebook is used on smartphone

Conclusion

Our main research question is: How does a group of university college students use Facebook as a communication platform for practical and social means, as well as to share academic sources?

The work we have presented in this article must be seen as the first part of a larger research project about students' use of social media (Facebook) in higher education.

Several findings are relevant to when the students are active on Facebook. When looking at the levels of activity in the group we note that a relatively large share occurs outside what we would call normal work hours. There was activity in the group during all weekdays and all weeks throughout the year. (Fig. 1, 2, 3).

This shows that the students were occupied with the course even when they were not on campus. We have at this stage not looked at whether or not the content of the posts were at an academic level or if it had any direct relevance to the course. Fig 1 represents an anomaly from this tendency, where some weeks the members posted almost as many posts with practical content as posts of an academic manner. The total level of activity varies throughout the year, and we mention some possible causes for this earlier. However, we have no basis to conclude why this is. Some interesting findings we can point out, is the fact that the students were very active from week one, and they used the group to stay in touch during their practice placement periods.

Posts with a practical content proved interesting because they showed that the students were helping each other by using the group. Several students found answers to questions and collected relevant information from Fronter, and posted it in the group when fellow students asked questions relevant to the program. These students functioned as oracles and teaching resources for their fellow students. According to the students in the survey this motivated them to follow the Facebook group.

What is interesting to note is that a relatively small share of the students was the most active in the Facebook group. (Fig. 4). We have not had the opportunity to collect data about who read the information in the closed group. Our data shows that approximately 40% of the members accounted for 80% of the content. When looking at activity in the Facebook group through the Facebook website, it is easy to get the misconception that everyone is taking part.

Our data only measured actions such as posts, comments and likes. An interesting phenomenon to look into would be to register how many students that just read what is published and get information this way. The fact that most students are passive is explained by Hewitt and Forte (2006) who claims that students might be more reserved because they think about how they will be perceived by their lecturers; they do not want to

reveal their digital identity. This phenomenon might help to explain why discussions and utterances in the form of comments with connection to the academic posts were low, with 2.3 comments on average attached to each post with academic content. Even though students produced less posts with social content, these posts were the ones with the most comments and likes. This might be because students felt these to be less dangerous and intimidating.

Roblyer et al.(2010) show, in a survey from the USA, that over 53% of academic employees at a university college meant that Facebook had no place in education, whilst 22.5% of students meant the same. This corresponds to a degree with our data which shows that 53 out of 60 students joined the group (Table 1). This can be an indication to that 53 students actually believe that Facebook has a relevant place in education. The fact that 3 students left the group during the academic year shows that there were some who did not find it relevant for some unknown reasons.

We found a clear correlation between gender and level of activity in the closed Facebook group (table 5). On average the female students produced almost double the amount of posts, a little more than double the amount of comments, and well over double the amount of likes. Similar correlations were found between the students who were active on Facebook generally and activity in the closed group. The ones who saw themselves as active or very active on Facebook generally, used the closed Facebook group a lot more. (Table 4). We also found that the students who had Facebook on their smartphones were the most active in the group (Table 6). This can possibly be explained with the fact that they have constant access to Facebook.

The collected and processed material invites to more thorough research, and we see interesting features that we intent to explore further. We see comparative surveys on one or multiple university college courses at different departments as a possible next step in the research project. It would also be interesting to expand the project to include groups at lower secondary schools and higher secondary schools, to see if the user patterns differentiate in the different levels of education.

In the next phase it will be relevant to use a qualitative approach. Through interviews and surveys we will get access to what students perceive they gain on academic, practical and social levels by being members of a closed Facebook groups, and if they think this replaces or act as an addition to other media/forms of communications.

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ⁱ <http://www.lu.hiof.no/>

ⁱⁱ We see that the groups have also been used to communicate about placements and vocational and academic didactics.

ⁱⁱⁱ <http://developers.facebook.com/docs/reference/api/>

iv Sent out to all members of the group via an email in the Facebook group, and as individual reminders on Facebook to all those who did not respond.

v Names are only used to link data from the Facebook survey. After this link all data has been processed anonymously.