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# Teaching & Learning for an Inclusive, Interconnected World

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## Table of contents

### First strand

#### Inclusive approaches to teaching and learning for an interconnected world

Novel immersive didactic approaches: trip a-bike by <i>Santolo Ciccarelli, Giacomo Cozzolino, Chiara Scuotto, Francesco Vincenzo Ferraro and Maria Luisa Iavarone</i>	»	9
Student teachers' contact with and attitudes towards immigrants by <i>Morten Løtveit and Liv Susanne Bugge</i>	»	17
Brain-based instructional design: teachers' collaborative planning from a research-training project by <i>Sara Mori, Alessia Rosa and Silvia Panzavolta</i>	»	35
Active, Constructive, Interactive... Co-creative! Suggestions for a participative instructional and assessment design by <i>Roberta Silva and Alessia Maria Aurora Bevilacqua</i>	»	57
On inclusive teaching strategies in the context of potentially conflict talk: 'Encouraging to connect topics to personal experience' in diverse primary classrooms by <i>Stanić Nikolina</i>	»	81

**Second strand**  
**Preparing teacher educators (TE) and TE stakeholders to model  
and facilitate Global Competence Education (GCE)**

Gifted Identification at school. A simulation of a training path  
for Italian teachers

by *Clarissa Sorrentino and Stefania Pinnelli* » 95

**Third strand**  
**Internationalising, decolonising and interculturalising teacher ed-  
ucation programmes**

Debate for citizenship skills: a case study in secondary  
school

by *Roberta Camarda and Guido Benvenuto* » 107

Enhancing scholarship holder international students'  
intercultural competencies with collaborative learning

by *Mária Hercz, Anisa Trisha Pabingwit and Ferenc Po-  
zsonyi* » 115

Prestige of the Teaching Profession: Development of the  
Research Tool

by *Martin Fico* » 127

Multicultural Practicum Groups as a Tool for Global Compe-  
tence. Internationalisation at home and abroad

by *Gerd Wikan* » 145

The Italian *Repertoire* of Tutors for the Professional  
Valorisation and Retainment in Small School

by *Giuseppina Rita Jose Mangione and Beatrice Miotti* » 161

Epistemological Beliefs and Teaching-Learning Perceptions  
of Student Teachers in Myanmar: A Quantitative Study

by *Thiri Pyae Kyaw* » 181

#### **Fourth strand**

##### **Non-formal education and its role in traditional schooling**

MOOC-Assisted Sexual Education in Tertiary Education  
Setting

*Ferenc Pozsonyi, Anisa Trisha Pabingwit and Mária Hercz* » 203

#### **Fifth strand**

##### **Digital technologies to make teacher education programmes international and intercultural**

The support teacher and the use of inclusive teaching technologies. Some evidence from the schools of the Abruzzo Region during the Covid-19 pandemic

by *Maria Vittoria Isidori and Alessio Santelli* » 219

Interactive Whiteboards as Support to Dialogic Teaching?

by *Kari Nes and Gerd Wikan* » 227

Towards an inclusive learning experience: proposing a checklist to assess digital textbooks

by *Damiano Meo, Monica Landoni and Luigi d'Alonzo* » 241

E learning in Albania during, before and after the pandemic (Analysis of Albanian education)

by *Albana Deda and Natasha Poroçani* » 253



## **First strand**

### **Inclusive approaches to teaching and learning for an interconnected world**



# **Novel immersive didactic approaches: trip a-bike**

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## **Abstract**

The pandemic produced alarming health and emotional effects on adolescents. In the past years, increased sedentary behaviours have been reported with associated cognitive and metabolic dysfunctions, whilst distanced learning has negatively affected students' motivation. Our international research team is developing a novel immersive didactic intervention to associate with traditional lessons. The Trip-a-Bike involves using a bike connected to a screen that projects a 360° video. While using the device, students can adjust the pedalling speed. Following embodied cognition theory and gamification principles, students will be asked questions about school topics while pedalling. The project aims to overcome the problems arising from the use of distance learning and improve students' physical condition, cognitive abilities, and motivation. Frame theory and expected outcomes are reported in this document.

Keywords: COVID-19; digital learning; post-pandemic; enhance didactic; pedagogy

## **Introduction**

During the pandemic, the use of distance education systems, which characterized the periods of confinement in many countries, was not only subject to problems related to the efficiency of connections with consequent problems in terms of learning (Lucisano, 2020) but also encouraged sedentary habits and unhealthy eating habits that also negatively affected learning. With the return to traditional didactics, it was found that a considerable number of students showed new deficiencies and problems in learning various didactic notions and concepts, which are fundamental for achieving primary educational objectives (Bazzoli et al., 2021). Novel problems related to cognitive and metabolic dysfunctions emerged (Ricci et al., 2020), especially among adolescents, who are already naturally subjected to discomfort due to the physical and hormonal changes that characterize this phase of life (Vanni, 2008).

Individual and group exercise has proven to be an excellent strategy for supporting individual health and well-being. Physical activity improves social development and resilience and is an excellent ally in preventing the onset and persistence of serious illnesses characterized by chronicity (Iavarone et al., 2010). In a study conducted in the city of Regina, Canada, involving 48 participants aged between 18 and 65 years with anxiety-related disorders, exercise sessions that included aerobic exercise and resistance training were administered (Le Bouthillier et al., 2017). During the experiment, symptoms of anxiety-related disorders, related constructs, and enjoyment of exercise were assessed prior to the intervention and weekly during the 4-week trial. The participants were further evaluated one week and one month after the intervention. At the end of the experiment, aerobic exercise was shown to improve general psychological distress and anxiety, while resistance training improved disorder-specific symptoms, anxiety sensitivity, anxiety tolerance and uncertainty intolerance. The results showed the effectiveness of the two exercise modalities in addressing anxiety-related symptoms (Le Bouthillier et al., 2017). A large body of scientific literature demonstrates that physical inactivity significantly increases the risk of mental and psychological illness and leads to an increased susceptibility to diseases and dysfunctions that can affect the entire body (Mittal et al., 2020). Although physicians have tended to overlook exercise as a preventive tool or as a therapeutic-prophylactic measure for many common diseases and disorders, it should be noted that physical activity can be used to treat comorbidities such as cardiovascular disease, chronic obstructive pulmonary disease, diabetes mellitus, osteoporosis, osteoarthritis, cancer, and low back pain (Barker et al., 2019). Other studies show that increased brain activity

after exercise leads to improved word recall. In particular, aerobic training appears to cause improved performance during vocabulary learning in children (Pruitt et al., 2021).

Teaching methodologies that rely on the principles of embodied cognition theory (a theory that supports the idea that the body's interactions with the environment foster cognition requiring novel structures or frameworks for interpretation (Shapiro 2019)) appear to be more effective than transmissive methodologies (a theory in which the educators are in control of the knowledge delivered, passively, to the students (Hyland, 2019)). The use of teaching systems that make use of gamification methodology (theory in which students are constantly engaged with games design and game elements to improve their learning experience (Kalogiannakis et al., 2021) seems to be increasingly successful among students (Liu et al., 2021) stimulating problem-solving activities (De Carvalho & Coelho, 2022).

Therefore, it is necessary to propose new teaching tools that can integrate with the conventional methodologies already in place and that aim to overcome the difficulties that have emerged during distance learning and that take into consideration the possibility of educating and training future generations in health and the concept of well-being (Ferraro et al., 2021). A different and innovative teaching method is essential to prepare the younger generations for work and life in the 21st century (Molina et al., 2021). Such innovative teaching should involve the use of tools capable of combining embodied cognition and gamification into a physical-body practice that facilitates the general well-being of students and increases their motivation to study (Donnelly et al., 2016).

Our international research team is proposing a novel tool named Trip-a-Bike that integrates recreational physical activity with the learning of educational topics to overcome the problems that have arisen from the use of distance learning related to learning motivation, students' physical state and their cognitive abilities. We aim to overcome the problems that have arisen from the use of distance learning relating to learning motivation and improve students' physical state and their cognitive abilities. The aim of the project is to propose a new device which integrates recreational exercise with the learning of didactic topics and concepts.

## **Methods**

The Trip-a-Bike project is based on the use of an integrated system involving a bicycle connected to a screen attached to a fixed support. This screen is to project a route with educational content recorded with the aid of a high-resolution camera suitable for shooting 360° videos. The entire system

also includes a stabiliser and interconnected support with suspended rollers that will have the function of transmitting data on the bicycle's acceleration parameters. Specifically, the steering of the vehicle will be detected by a smartphone's accelerometer positioned at the top of the steering wheel. Therefore, based on the pedalling intensity, the route's speed, and any stops due to braking will be adjusted to create interactions between the user and cyberspace that mimic an authentic experience.

During the ride, once the targets (e.g., images related to historical and cultural content) have been reached, the ride will undergo pauses during which the same targets can be viewed in detail. During these breaks, questions related to the events or exhibits will appear on the screen. Based on the principles of gamification defined above, which uses elements and rules borrowed from games and game design techniques in contexts outside the games themselves (Pertuzzi, 2015), the students will be able to answer different questions during the ride by choosing from an alternative set of answers that will appear on the screen of the smartphone placed on the bicycle handlebar (Dicheva et al., 2015).

In addition, the use of Trip-a-Bike is based on the principles of embodied cognition theory (defined above) which hypothesises that the brain is not the only problem-solving resource but that the body components and its guided movements within space do much of the work necessary to achieve specific goals, simplifying a series of processes that would otherwise be attributable to merely mental representations (Wilson et al., 2013).

The project will encourage digital natives to break out of the isolation caused by using new technologies and adapt them in a resilient and responsible manner (Kato et al., 2012). To verify and measure the benefits of using Trip-a-Bike before and after training, the research team will conduct anthropometric measurements and athletic tests to identify any improvements from a physical point of view, along with specific tests to measure students learning and cognitive abilities (Loprinzi, 2018; Foley, 2017; Iavarone et al., 2004).

### **Expected Results and Discussion**

The Trip-a-Bike project aims to overcome the problems arising from the use of distance learning relating to learning motivation and improve students' physical state and cognitive abilities. Trip-a-bike represents a technological tool that allows students to live an immersive experience in virtual contexts that recall educational content, and this can improve students' learning and understanding (Klopfer et al., 2004).

The research team aspects of reporting the following outcomes.

Changes in perceptions of competitiveness, task orientation, and mastery climate. Improvement in students' learning motivation through the practice of play-based physical activities. For example, in a research study conducted in an Australian public school involving six classes with a total of 115 students practising the sports of football, hockey, and soccer, there was a significant difference between students practising sporting activities and students engaged in traditional teaching methods (Spittle et al., 2009). The learning abilities decreased from pre-test to post-test in students who underwent a traditional teaching protocol compared to students practising sporting activities. The results suggest that the practice of sport facilitated the high maintenance of intrinsic motivation, task orientation, and mastery conditions compared to a traditional teaching approach (Spittle et al., 2009).

Improvements in memory abilities. As reported in a study conducted on a sample of 359 athletes from the UK basketball academy (Mage =  $18.91 \pm 1.01$ ) with a range of athletic expertise (novice  $n = 99$ , amateur  $n = 92$ , elite  $n = 87$ , and super-elite  $n = 81$ ) completed a series of neurocognitive tests assessing attention, working memory control, and a cognitively engaging motor task (e.g., a free throw basketball task) (Vaughan et al., 2021). The more experienced athletes performed better on the tasks of attention, working memory control, and working memory capacity. The results of structural equation modelling indicated a positive association between cognitive measures and sports performance. In particular, working memory control and working memory capacity mediated the relationship between attention and sports performance. Furthermore, the invariance test indicated more significant effects for those with greater athletic skills (Vaughan et al., 2021). Finally, by introducing physical activity as a part of the learning process, the research team is expected to enhance adolescents' metabolic parameters (Hargreaves et al., 2020). In conclusion, the Trip-a-Bike project aims to overcome the problems arising from using distance learning relating to learning motivation and improve students' physical and cognitive abilities. The first results will be available in 2023/24.

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# Student teachers' contact with and attitudes towards immigrants

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## Abstract

The aim of this article is to shed light on what effects student teachers' contact with immigrants may have on their attitudes towards immigrants.

We have no knowledge of any other study which examines the correlation between these variables in the way done in this study. The findings in this article may help us understand how and why student teachers' attitudes towards immigrants change. Such knowledge can help us prepare student teachers for the task of developing inclusive schools in diverse societies. The findings will be discussed in view of Allport's (1954) intergroup contact hypothesis and debates about the hypothesis in recent studies, among them Paluck et al. (2019) and Pettigrew et al. (2011).

We conducted a longitudinal and quantitative study on student teachers' views on multicultural issues. Here we focused on the students' contact and friendship with immigrants in relation to their attitudes towards them. Data was collected in 2014 (N1 = 388, response rate 90%) and 2017 (N2 = 268, response rate 82%) at a Norwegian teacher education institution. The same student groups answered the same questionnaire in 2014 and in 2017.

We find that student teachers with immigrant contacts demonstrate more positive attitudes towards immigrants than students without such contacts. After three years of study, student teachers show more positive attitudes towards immigrants than when they began their studies. In addition, we present findings about differences in attitudes between student teachers with and without immigrant contacts before and after three years of study.

**Keywords:** Student teachers; immigrants; attitudes; contact hypothesis

## **Introduction**

In this article we address student teachers' contact with immigrants and how such contact may influence their attitudes towards immigrants. The article will also briefly address the effects of education as such, often reckoned in terms of years of study, on the students' attitudes towards immigrants. In the following, we will present some relevant theoretical discussions.

## **Literature review**

In 1954, Gordon W. Allport formulated the so-called contact hypothesis:

Prejudice (unless deeply rooted in the character structure of the individual) may be reduced by equal status contact between majority and minority groups in the pursuit of common goals. The effect is greatly enhanced if this contact is sanctioned by institutional supports (i.e., by law, custom or local atmosphere), and provided it is of a sort that leads to the perception of common interests and common humanity between members of the two groups (Allport, 1954, p. 281).

Allport's hypothesis was based on earlier studies, including studies of the impact of housing and workplace desegregation on prejudice towards black people. Discussing the concept of prejudice, and of ethnic prejudice in particular, Allport ended up with this condensed definition of ethnic prejudice:

Ethnic prejudice is an antipathy based upon faulty and inflexible generalization. It may be felt or expressed. It may be directed toward a group as a whole, or toward an individual because he is a member of that group (Allport, 1954, p. 9).

For Allport, ethnic prejudice is not a purely cognitive concept, but a concept that also involves emotions and behaviour. In the first quote above we note that Allport focused on how contact may influence prejudice in interactions between majority and (different) minority groups in general. He was, however, mainly interested in relationships between majority and minority ethnic groups in the United States, particularly between whites and blacks, and to some extent, Jews. Our article deals with attitudes towards immigrants in Norway. Negative attitudes towards immigrants are not necessarily racist or expressions of ethnic prejudice, even though that may

be the case. The category “immigrants” include different ethnic, linguistic, and social groups. What make them a minority is their origins as outsiders to the society in which they have come to live.

Much research on Allport’s hypothesis has been conducted during the last few decades (see for example the contributions in Dovidio, Glick, & Rudman, 2005). Thomas F. Pettigrew, Linda R. Tropp, Ulrich Wagner and Oliver Christ, of whom the two first conducted a meta-analysis with 515 studies on intergroup contact, concluded (2011) that “intergroup contact typically reduces prejudice (mean  $r = -.21$ ).” At the same time, however, they reconsidered some of Allport’s assumptions. For example, they found that intergroup prejudice reduction could take place even if Allport’s conditions of “equal status, common goals, no intergroup competition, authority sanction” were not in place (Pettigrew et al. 2011, p. 272). In addition, prejudice reduction was not the only beneficial result of intergroup contact, but also “reduced anxiety, individual threat, collective threat and ingroup identification together with enhanced empathy, perspective taking, outgroup knowledge, intergroup trust, forgiveness, job attainment and satisfaction, and perceptions of outgroup variability.” (Pettigrew et al., 2011, p. 275).

According to Pettigrew and his co-authors, changes of feelings or attitudes may not be the outcome of changes of ideas or concepts. The authors point out that “affective measures as liking” show “significantly larger effects than such cognitive indicators as stereotypes.” Thus, “we may come to like the outgroup even while our stereotypes of the outgroup persist” (Pettigrew et al., 2011, p. 275). The authors, furthermore, put particular emphasis on the value of cross-group friendships, as such friendships foster positive attitudes that are resistant to change (Pettigrew et al., 2011, pp. 275-276).

Not all intergroup contact, however, leads to reduced prejudice. If people feel threatened or they are forced to interact with individuals of a different group, let us say, at military check points during a conflict situation, feelings of threat is likely to lead to a negative outcome. Voluntary contact, therefore, is essential for prejudice reduction to take place (Pettigrew et al., 2011, p. 277).

Elizabeth Levy Paluck, Seth A. Green and Donald P. Green re-evaluate the contact hypothesis (2019) – note the use of the term hypothesis rather than theory - in an article that can be considered a methodological critique of many of the studies included in Pettigrew and Tropp’s meta-analysis. Their re-evaluation, furthermore, results in findings that on some important scores differ from those of Pettigrew and his co-authors. Paluck, Green and Green, present their study both as an attempt to update Pettigrew and Tropp’s

meta-analysis, to bring in “research conducted outside psychology” and to “attend to policy-relevant studies that speak to the practical applications of intergroup contact”, because “[a] policy-maker might reasonably ask whether the effects of contact endure for days, weeks, months or years” (Paluck et al., 2019, p. 131).

Paluck and her co-authors assembled some of the studies used in Pettigrew and Tropp’s meta-analysis, that is, the studies they considered to be most methodically advanced, including studies with random assignment (pp. 129, 132) and “delayed outcome measures” (pp. 129, 136). Then they added some newer studies from the 2006-2016 period, considered to be of high quality, in their meta-analytic assemblage. In their thorough examination, they also found positive effect of contact. However, they point out some gaps or challenges with respect to the contact hypothesis, for example that “[f]ew studies address prejudice in adults over 25 years of age” (p. 152). Furthermore, their meta-analysis “suggests that contact’s effects vary, with interventions directed at ethnic and racial prejudice generating substantially weaker effects” (p. 129) than, for example, those directed at people with mental and physical disabilities (p. 147). They also noted that “few [studies] state explicitly whether their contact intervention meets one or more of Allport’s four conditions” (p. 153). Paluck, Green and Green conclude that “important gaps must be addressed before this research can reliably guide future policy decisions” (p. 154).

We investigate *what impact the number of immigrant contacts and friends may have on attitudes towards immigrants in light of the contact hypothesis*. With respect to our own study, it shows long-term effects of contact and friendship between the respondents and immigrants. In this sense it is in line with the recommendations of Paluck and her co-authors.

### **Methodology**

To research student teachers’ views on aspects of multicultural awareness, we carried out a quantitative study using structured questionnaires. The respondents were full-time student teachers who attended either the School Teacher Education Programme or the Kindergarten Teacher Education Programme at a Norwegian teacher education institution. The questionnaires were administered at two different times: the autumn of 2014 (N1 = 388) and the spring of 2017 (N2 = 268). In both 2014 and 2017, the same group of student teachers participated. The longitudinal design was chosen to be able to study changes over time. However, due to requirements of privacy protection, we are unable to track the same *individual* respondents on the two points of time.

Hence, we wished to follow students during their first three years of study. In 2014, we invited all enrolled novice student teachers to participate in the study. During the second round of data collection (2017), the same respondents were invited to participate, and at this time, they were approaching the end of their third year in teacher education. The response rates were 90% in 2014 and 82% in 2017. The high response rates strengthen the significance of the findings (Løvteit & Bugge, 2018). However, given the objective of the study, possible consequences of the missing students should be given attention. We are not able to tell whether the non-attendance is systematic. In this study, however, we have no reason to believe that those who were not present at the time of data collection are students that differ systematically in attitudes towards multicultural society.

Data were gathered during compulsory lecture times; one of the researchers collected the questionnaires immediately after completion to avoid non-response. In addition to background variables (study programme, sex, age, parents' education, stream, and grades from upper secondary school), the questionnaire included the following subjects: interaction with immigrants, attitudes towards immigrants and views on cultures and cultural diversity. We also included preferences about one's future relations with immigrants, knowledge about immigrants' situations in Norwegian society and views on specific issues from the current debate on immigration in Norway.

When designing the questionnaire, we decided to copy some questions from an annual national representative study, conducted by Statistics Norway, to be able to compare the results from our study with those of the national study (Blom 2014; Blom 2017).

Measuring attitudes is complicated, but one possibility is to ask respondents to give their evaluation of certain statements. In this study, we have chosen to ask the respondents to judge the following statements: 1) "Most immigrants make an important contribution to Norwegian working life" and 2) "Most immigrants enrich cultural life in Norway". As explained below, the statements are borrowed from a national survey.

To judge the statements, the respondents could choose among the following answering alternatives: "Agree completely", "agree to a certain degree", "both [yes] and [no]", "disagree to a certain degree", and "disagree completely". Regarding both statements, agreeing completely or to a certain degree is interpreted as indicating a positive attitude towards immigrants.

## Findings

With a basis in the contact hypothesis, we examine what impact the number of contacts and friends with immigrant background have on the respondents' views on immigrants.

The first question we address is how many contacts and friends the respondents have.

**Table 1. Number of immigrant contacts. 2014 and 2017. Percentages.**

	2014	2017
0	18	14
1-4	50	49
>=5	31	37
Total	99 (N=376)	100 (N=262)

From Table 1 we see that a high proportion of the respondents have contact with immigrants. Furthermore, the proportion of respondents with immigrant contacts has risen moderately from 2014 to 2017. In 2014 81% of the sample had immigrant contacts, in 2017 this had grown to 86%. Compared to the national survey published annually by Statistics Norway, a higher percentage of our respondents have immigrant contacts than the national average. Nationally 70% had immigrant contacts in 2014, and 78% in 2017 (Blom, 2014; Blom, 2017).

Also, the number of immigrant contacts each respondent had is quite high. Moreover, as we can see from Table 1, there has been a rise in the *number* of immigrant contacts the respondents have between 2014 and 2017. In 2014 31% had five contacts or more, in 2017 the corresponding number was 37%. At a national level, however, 46% had five or more contacts in 2014 and 53% in 2017. This difference may be because contact with *many* immigrants is more common in urban areas than in rural parts of Norway (Blom, 2017), and our respondents are enrolled at a university in the rural part of the country.

Contacts and friends are not the same. According to Pettigrew et al. (2011, pp. 275-276)

Friendship invokes many of the optimal conditions for positive contact effects: it typically involves cooperation and common goals as well as repeated equal-status contact over an extended period and across varied settings.

We should, thus, expect more positive attitudes towards immigrants among respondents having immigrant friends, compared to those only having immigrant contacts. Then, how many student teachers have friends with immigrant background?

**Table 2. Do you have friends with immigrant background? 2014 and 2017. Percentages.**

	2014	2017
No	37	36
Yes	63	64
Total	100 (N=387)	100 (N=267)

Roughly two out of three student teachers have at least one friend with immigrant background (Table 2), this is the case at both points of time. Hence, there has been no change in the respondents' number of friends during the period 2014-2017. This could reflect that few students with immigrant background are enrolled in teacher education, and hence there are few possibilities for majority students to make new friends with immigrant backgrounds when enrolled in teacher education. One could further assume that a high proportion of friendships and contacts with immigrants are established and maintained outside of university. The proportion with friends has not diminished during the three years of study, this could have been expected as a result of respondents moving away from friends in the area where they were raised, and barely being able to establish new friendships with immigrants on campus, because there are few of them.

The next issue is whether the existence of immigrant contacts and friends is correlated with the respondents' views on immigrants, as suggested by the contact hypothesis.

We first examine the correlation between number of immigrant contacts and view on whether immigrants make an important contribution to Norwegian working life. The formulation in the questionnaire at this point has been presented above.

**Table 3. Number of immigrant contacts and view on whether most immigrants make an important contribution to Norwegian working life. 2014 and 2017. Percentages.**

2014				
	Most immigrants make an important contribution to Norwegian working life			
Number of immigrant contacts	Agreeing strongly or on the whole	Both [yes] and [no]	Disagreeing strongly or on the whole	Total
0	33	58	9	100 (N=66)
1-4	43	50	6	99 (N=189)
>=5	55	41	4	100 (N=118)
Total	45	49	6	100 (N=373)
2017				
0	35	65	0	100 (N=37)
1-4	57	42	1	100 (N=129)
>=5	72	27	1	100 (N=96)
Total	60	40	1	101 (N=262)

Table 3 shows that many respondents think that immigrants contribute to Norwegian working life. More student teachers are positive to immigrants' contribution to Norwegian working life in 2017 than in 2014. In 2014 45% of the student teachers think that immigrants make an important contribution to Norwegian working life. The corresponding figure in 2017 is 60%, which represents a significant increase. One finding is that the more immigrant contacts a student teacher has, the more positive is her/his impression of immigrants' contribution to Norwegian working life. This is the case at both points of time. This finding is in line with the contact hypothesis, especially as outlined by Pettigrew et al. (2011).

We can add that the number of respondents who are negative to immigrants' contribution to Norwegian working life (disagree) nearly has disappeared during the period 2014-2017, from an average of 6% in 2014 to only 1% in 2017.

On a national level, in 2014 77% agreed strongly or on the whole to the statement that most immigrants make an important contribution to Norwegian working life, compared to 71% in 2017. We can conclude that our respondents have become more positive during these three years, whereas the national representative sample from Statistics Norway shows the opposite development (Blom, 2014; Blom, 2017). However, the proportion of positive respondents is higher in the national study. This could however, at least partly, be explained by the way the questions were asked in our

questionnaire, compared to the procedure in the national survey. In our study the respondents were presented to all alternatives at first glance, whereas in the national study, the respondents were only presented to the ‘neutral’ alternative if they explicitly asked for it (the national study was carried out by phone). This difference makes it difficult to compare the results directly.

We will now address the same statement as above, but in relation to friendship with immigrants.

**Table 4. Friends with immigrant background and view on whether most immigrants make an important contribution to Norwegian working life. 2014 and 2017. Percentages.**

2014				
	Most immigrants make an important contribution to Norwegian working life			
Do you have friends with i. b.*?	Agreeing strongly or on the whole	Both [yes] and [no]	Disagreeing strongly or on the whole	Total
No	31	61	8	100 (N=142)
Yes	52	42	6	100 (N=242)
Total	45	49	7	101 (N=384)
2017				
No	44	55	1	100 (N=96)
Yes	67	32	1	100 (N=171)
Total	59	40	1	100 (N=267)

\* i. b. = immigrant background

From Table 4 we can see that both in 2014 and 2017 there is a clear difference between respondents with and without immigrant friends regarding their view on whether most immigrants make an important contribution to Norwegian working life. In 2014, 31% of the respondents without immigrant friends agree to the statement that most immigrants make an important contribution to Norwegian working life, opposed to 52% of those who have immigrant friends. The corresponding figures three years later are 44% and 67%. Hence, respondents with immigrant friends are more positive to the statement above. We can also conclude that the respondents overall are more positive in 2017 than in 2014. This finding is of course in accordance with Table 3. Among those with immigrant friends in 2017, two out of three agreed that most immigrants make an important contribution to Norwegian working life.

We will now see Table 3 and 4 in relation to each other, looking in more detail on those respondents who have both immigrant contacts and

immigrant friends. In 2014 there is only a small difference between respondents with contacts (those with 1-4 and 5 or more contacts seen together) and respondents with friends: 48% of those with immigrant contacts agreed that most immigrants make an important contribution to Norwegian working life, compared to 52% of those with immigrant friends. Three years later the difference is almost the same: 64% of those with immigrant contacts agreed to the statement, compared to 67% among those with immigrant friends. Regarding respondents with immigrant contacts, this may be in line with the contact hypothesis. However, if we follow Pettigrew et al. (2011) and Matsuo et al. (2013), we should have expected a larger difference between respondents with immigrant contacts and immigrant friends.

According to Matsuo et al. (2013), the impact of personal contact is most clearly seen in groups with established negative attitudes. Our respondents are maybe not strongly influenced by negative biases. If true, this may at least partly be explained by the finding in various studies that the higher educated a person is, the more positive he or she is likely to be towards immigrants (Hagendoorn & Nekuee, 1999; Blom, 2017; Duru, Hanquinet & Cesur, 2017; Strøm & Molstad, 2020). In this study, the respondents are above average in terms of education.

We now turn to our respondents view on whether most immigrants enrich cultural life in Norway.

**Table 5. Number of immigrant contacts and view on whether most immigrants enrich cultural life in Norway. 2014 and 2017. Percentages.**

2014				
	Most immigrants make an important contribution to Norwegian working life			
Number of immigrant contacts	Agreeing strongly or on the whole	Both [yes] and [no]	Disagreeing strongly or on the whole	Total
0	38	53	9	100 (N=66)
1-4	49	41	10	100 (N=188)
>=5	54	37	9	100 (N=116)
Total	49	42	9	100 (N=370)
2017				
0	43	54	3	100 (N=37)
1-4	67	30	2	99 (N=129)
>=5	80	18	2	100 (N=96)
Total	69	29	2	101 (N=262)

From Table 5 we see that a considerably higher proportion of the student teachers agreed with the statement: “Most immigrants enrich cultural life in Norway” in 2017 (69%) compared to three years earlier (49%). There is also a clear tendency that the more immigrant contacts the respondents have, the more positive they are to the statement. This is the case at both points of time. In 2017, 80% among those having five or more immigrant contacts agreed, an augmentation of 26% compared to 2014. This is in line with the contact hypothesis.

We will now look at the same statement as above, but in relation to friendship with immigrants.

**Table 6. Friends with immigrant background and view on whether most immigrants enrich cultural life in Norway. 2014 and 2017. Percentages.**

2014				
Most immigrants make an important contribution to Norwegian working life				
Do you have friends with i. b.*?	Agreeing strongly or on the whole	Both [yes] and [no]	Disagreeing strongly or on the whole	Total
No	43	46	11	100 (N=141)
Yes	51	40	9	100 (N=239)
Total	48	42	10	101 (N=380)
2017				
No	60	36	3	99 (N=96)
Yes	73	25	2	100 (N=171)
Total	69	29	2	100 (N=267)

\* i. b. = immigrant background

From Table 5, we already know that a considerably higher proportion of the respondents agree with the statement ‘Most immigrants enrich cultural life in Norway’ in 2017, than three years earlier. From Table 6, we find that in 2017 the majority agree, regardless of whether they have friends with immigrant background or not. We notice that the difference between those with and those without immigrant friends is somewhat larger in 2017 than in 2014. In 2017 three out of four who have friends with immigrant background agreed that most immigrants enrich cultural life in Norway, opposed to 60% among those without such friends.

Hence, having friends seems to contribute to more positive attitudes to immigrants. As pointed out above, this is in line with both Pettigrew et al. (2011) and Matsuo et al. (2013). The former writes:

Friendship invokes many of the optimal conditions for positive contact effects: it typically involves cooperation and common goals as well as repeated equal-status contact over an extended period and across varied settings. Friendship also facilitates self-disclosure; and self-disclosure is an important mediator of intergroup contact's positive effects (Pettigrew et al., 2011, p. 276).

Regarding the statement about immigrants' contribution to cultural life, we will now look more closely into the question of whether there are differences between having contacts and friends. In the same way as with Table 3 and 4 above, we will compare those having immigrant contacts (1 or more) with those having friends. In 2014 51% of respondents with one or more immigrant contacts agree with the statement 'Most immigrants enrich cultural life in Norway', which is the same percentage as for those having friends with immigrant background. In 2017 we also find the same level of agreement among those having contacts and those having friends, but the level has risen to 72% and 73%. This rise has been commented upon above, but the finding that there in this respect is no difference between contacts and friends is worth discussing. According to the literature cited above, we would have expected that those having friends would be more positive towards immigrants than those having contacts. We do not know why there is virtually no difference between respondents with contacts and with friends in this respect.

## **Discussion**

So far, the analysis has dealt with the impact of having friends or contacts with immigrant background on attitudes towards immigrants. We will now discuss whether some of the above results may be explained, at least partly, by the level of education among the respondents. As referred earlier, by and large, the higher educated a person is, the more likely he/she is to have positive attitudes towards immigrants. This, at least, is what we could expect in modern democratic societies.

In a report from Statistics Norway, *Holdninger til innvandrere og innvandring 2020* [Attitudes towards immigrants and immigration 2020], Frøydis Strøm and Christian Sørlien Molstad (2020) write: "In the last years the surveys have shown increasingly more positive attitudes toward immigrants, and this trend continues also this year." (p. 5). They mention some patterns that have been typical:

Attitudes vary according to the characteristics of the respondents. Women more often hold positive attitudes toward immigrants than men, and young people are more liberal than older. **Respondents with high education are more positive toward immigrants and immigration than those with lower education.** (p. 5, our bold face, M.L. & L.S.B.)

In a Norwegian context, thus, we should expect our respondents to show positive attitudes to immigrants, and furthermore, more positive attitudes after three years of study than when they began their studies.

According to Pierangelo Piero, “the interpretive key to understand the relationship between prejudice and schooling, is the extent to which exposure to the educational process produces:

- knowledge and information
- cognitive sophistication, and the capacity to manipulate complex conceptual categories
- tolerance of, and openness towards, democratic principles and liberal values.” (Peri, 1999, p. 45)

From Peri’s point of view, it thus seems dubious that all kinds of education necessarily result in reduction of prejudice. Peri sees three ways in which education may contribute to reduce prejudice. First, directly, through the knowledge and information that students obtain, second, indirectly, by influencing students’ attitudes and values, and third, by enabling students to achieve jobs in which they are less vulnerable to competition from minorities (Peri, 1999, p. 51).

In a short article on the World Economic Forum’s website, Jan Germen Janmaat asks “how is it possible that anti-immigrant sentiments – as expressed in the Brexit vote and the election of Trump – are so virulent when the education levels of Britons and Americans are at their highest ever?” Research that Janmaat is involved in, indicates “that while younger people may have become increasingly tolerant of sexual fluidity and racial and cultural diversity, they are growing less positive about immigrants” (Janmaat, 2016). A methodological problem with this research, as Janmaat describes it, is that it focuses on attitudes to immigrants in different age groups rather than on people with different levels of education. Even if young people often have higher education than older people, this is still a questionable procedure.

James Dennison and Andrew Geddes point out that among the members of the European Union there was a “short-term uptick in support for ... [anti-immigration] parties between 2005 and 2017, and especially around 2015” (p. 110). At the same time, major social science surveys showed that in most

EU countries people were becoming more positive to immigrants. Dennison and Geddes' way of explaining these seemingly contradictory tendencies is to pay attention to the salience of immigration during these years. Even though the Eurobarometer for example indicated that attitudes to immigrants in the 28 EU countries became more positive between 2014 and 2017, the negative attitudes to immigrants were quite high at the outset, at about 60% negative feeling towards non-EU immigrants and 40% negative feelings towards EU-immigrants in 2014. Thus, there existed a potential for mobilizing voters to support anti-immigrant parties if the issue of immigration came high up on the political agenda. As soon as other political issues became more salient, support for anti-immigration parties was likely to decrease. Thus, Dennison and Geddes believe that "the salience of immigration is the most important, though probably not exclusive, issue salience predictor of national-level polling for anti-immigration parties" (p. 113). Rather than to see the increased support for anti-immigrant parties as an outcome of more voters adopting anti-immigrant attitudes, Dennison and Geddes believe that it largely was an outcome of more intense anti-immigrant feelings among voters who were already negatively disposed to immigrants. These findings suggest that it is questionable to evaluate the effects of education on attitudes to immigrants in terms of voters' support for anti-immigrant parties.

Our respondents are student teachers. They were enrolled in Teacher Education in the autumn of 2014 and answered the first questionnaire shortly thereafter. The last data was obtained three years later. Hence, in the meantime, they had acquired nearly three years of higher education. If contacts and friends with immigrant background was the only reason for the change towards more positive attitudes towards immigrants, we would have expected that respondents without such contacts and friends would not have presented such a change. However, we see that this is far from what we have found. All the tables (3, 4, 5 and 6) reveal the same picture: The development towards more positive attitudes towards immigrants has taken place also among respondents with no contacts or friends among immigrants. For example, from Table 6 we learn that in 2014 43% of respondents without immigrant friends agree that most immigrants enrich cultural life in Norway, compared to 60% in 2017.

### **Conclusions**

In a longitudinal study on student teachers' views on multicultural issues, we analyse student teachers' contact and friendship with immigrants in relation to their attitudes towards them. The same group of student teachers

were included in the study in 2014 and 2017. In general, we find that student teachers with immigrant contacts, as well as with immigrant friendships, demonstrate more positive attitudes towards immigrants than students without this type of contacts/friendships. This finding is in accordance with the contact hypothesis as presented above.

We find that a high proportion of the respondents have contact with immigrants. Moreover, there has been a rise from 2014 to 2017 in the *number* of immigrant contacts the respondents have. When it comes to immigrant friendships, roughly two out of three student teachers have at least one friend with immigrant background, this is the case at both points of time.

In our study, we also find that more respondents are positive to immigrants' contribution to Norwegian working life in 2017 than in 2014. The more immigrant contacts the respondents have, the more positive is their impression of immigrants' contribution to Norwegian working life. This is the case at both points of time. We find the same pattern when analysing the number of immigrant friendships in relation to this statement. Both in 2014 and 2017 there is a clear difference between respondents with and without immigrant friends regarding their views on the topic. Respondents with immigrant friends have more positive views in immigrants' contribution to Norwegian working life.

The last issue analysed is related to the respondents' view on whether most immigrants enrich cultural life in Norway. Our study shows a considerably higher proportion of the respondents agreeing to the statement: "Most immigrants enrich cultural life in Norway" in 2017 compared to three years earlier. We also find that the more immigrant contacts the respondents have, the more positive they are to the statement about cultural life.

Regarding the importance of having immigrant friends, three out of four who have friends with immigrant background in 2017 agreed that most immigrants enrich cultural life in Norway, which is substantially higher than three years before. Among respondents without immigrant friends, there are fewer respondents who are positive to the statement. This tendency is particularly clear in 2017. Hence, having friends seems to contribute to more positive attitudes to immigrants. This is in line with the contact hypothesis, especially as outlined by Pettigrew et al.

According to the contact hypothesis, we would have expected a difference between those having immigrant contacts and those having immigrant friends. Regarding the first statement about immigrant's contribution to working life, there is a small difference indicating a more positive view among respondents with immigrant friends opposed to those with immigrant contacts. Regarding the statement about enrichment of cultural life, there is virtually no difference between respondents with immigrant friends and

immigrant contacts. This is our only finding that does not appear to be in accordance with the contact hypothesis. It is worthwhile to look into the topic in more detail, but this goes beyond the scope of this article.

Regarding the impact of higher education, the findings above are in accordance with numerous research studies indicating that higher education is associated with more positive attitudes towards immigrants. The respondents have been enrolled in higher education for three years at the time of the second data collection. To summarise, the changes in attitudes presented in this article, could, in addition to the respondents' contact and friendship with immigrants, partly be an impact of education.

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# **Brain-based instructional design: teachers' collaborative planning from a research-training project**

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## **Abstract**

Knowing how the brain works can improve learning processes and the educational relationship. Within the school organisation, moreover, collaboration in the design of teaching is an aspect that can enhance the feasibility and transferability of teaching activities. The research-project herein described aims to explore the potential of educational neuroscience to enhance students' autonomy and socio-emotional skills in the school transition classes (from kindergarten to primary school and from the primary to secondary school). The aim of this paper is to describe the teachers' educational plans before the piloting phase. Teachers worked in groups clustered per educational levels. The analysis aimed at highlighting predominant topics and strategies to gather potential good practices of brain-based design. The results can therefore be useful to promote inclusive approaches to teaching and learning and contribute to facilitate Global Competence Education (GCE)

Keywords: collaborative design, neuroscience, neurodidactics, content analysis

This paper stems from the collaborative work of the authors. In particular, Sara Mori is the author of paragraphs "Contribution objectives and research methodology", "Procedures", "Results", "Conclusions"; Silvia Panzavolta is the author of paragraphs "Introduction", "Training course contents", "Participants", "Discussion, Group B"; Alessia Rosa is the author of paragraphs "Co-designing learning opportunities" "Lesson planning tools" "Discussion, Group A".

## Introduction

The project "Neuroscience for education continuity" is a collaborative research project aiming to explore the potential of educational neuroscience to enhance students' autonomy and socio-emotional skills in the school transition classes (from kindergarten to primary school and from the primary to secondary school).

The research questions of the project are as follows: "Can brain-based research inform teaching practices and learning design, in order to enhance educational continuity?", "Can brain-based research help teachers promote pre-primary and primary pupils' autonomy?" and again "Can brain-based research help teachers support students aged 10-12, in strengthening their study strategies, both considering the specific subjects' approach and their cognitive styles?".

As for the theoretical frameworks, we considered three principal areas: the MBE (Mind, Brain and Education) science (Betts et al., 2019; Tokuhamma-Espinosa, 2019), educational neuroscience (Geake, 2009; Rivoltella, 2012; Dehaene, 2019) and affective neuroscience (Immordino-Yang & Damasio, 2007; Immordino-Yang, 2012; Ivry, Mangun & Gazzaniga, 2005).

The research design draws on participatory and collaborative models (Magnoler, 2012; Asquini, 2018; Mortari & Ghirotto, 2019) considering both co-researching with teachers while providing them training opportunities (Asquini, 2018; Mortari & Ghirotto, 2019) and employes quali-quantitative investigation techniques (Creswell, 2003). In this type of methodological approach to researching, the roles of teachers and of researchers are synergistic: researchers carry out a synthesis and a connection with the theoretical foundations of literature, create educational resources, propose changes or lesson plans based on data emerging from the brain-based research. Learning for teachers becomes an occasion not just for receiving new content (*technical learning*) but for transforming their mindframes (*transformational learning*) (Mezirow, 1995). Teachers reflect on different suggestions, design new learning opportunities, experiment in their classrooms, observe the effects on students, carry out the documentation, and share interpretations with peers and with the researchers to design an educational program based on brain-based informed practices.

The purpose of the research is both descriptive and evaluative.

The research started from an online professional development course for teachers aimed at stimulating their reflection on learning/teaching practices.

The main objectives of the "Neuroscience for education continuity" research project are to embed the evidence that comes from brain-based research, mainly tested in the US educational system, into the Italian context; to focus on particular age groups, where educational continuity is strongly influencing students' learning (i.e. when children pass from kindergarten to primary school and from primary school to lower secondary school); to improve teaching practices by drawing on brain-based research; to explore the potential of a blended professional development course in educational neuroscience; and to change teaching design of learning in pre-primary, primary, and lower secondary schools.

The research is divided into 4 phases: the first phase is the period of pre-test for teachers, before starting the training course, to gather information on their previous knowledge on neurosciences applied to education and on their mindframes; the second phase is the post-test period for teachers, at the end of the course, to investigate their perception on how their competencies developed due to the course and to the co-planning of teaching units with peers. Finally, phases 3 and 4 are dedicated to embedding educational neurosciences into the curriculum, from the design of lesson plans to classroom experimentation, to evaluate the effects of such units on students.

### **Training course contents**

The course content was accurately designed considering neuroscience research and its applicability to education and classroom organisation. The structure of the course is made up of three modules, each encompassing seven videoleasons. Videoleasons, lasting between 20 and 25 minutes, are organised in three parts and are, in a way, brain-friendly, since they facilitate retention and retrieval of contents. Each video lesson has an introduction, presenting the content of that clip, making connections with other lessons, and providing some examples to be as clear as possible. The central part of the video presents in-depth contents and applications to classroom activities and the third part recalls the topic of the lesson and recaps all main elements as a sort of link-back to the previous parts.

All modules have a wide range of study materials as compendium to the videoleasons, which are intended to cover a sort of syllabus of brain-based research applied to education but that cannot cover the entire field of knowledge. The study material can be in the form of articles, videos, grids, examples of lesson plans, or bibliographic references. Of the three modules, two (the first and third) are addressed to all-grade teachers; the second module has been divided into 2 parts, one for

kindergarten/primary (grades 1 and 2) teachers, the other for primary (grades 3-5) and lower secondary school teachers.

Videolessons and study material draw on the literature and frameworks on educational and affective neuroscience described in the “Introduction.”

As for the topics covered in the three modules, we provide hereof a brief description module by module:

- Module 1 (common for all teachers): the memory system; brain adaptations and neuroplasticity; the factors that influence learning; attention; emotion; motivation in school; intelligence.

- Module 2

2A) Kindergarten and primary school (grades 1 and 2) teachers: the importance of play; the brain in its development in music and arts education; the movement and the brain; the power of storytelling; the attachment theory.

2B) Primary school (grades 3-5) and lower secondary school teachers: learning to learn; formative assessment; the neuroscientific basis of active learning; classroom climate; digital tools to support brain-friendly teaching; autonomous learning and peer tutoring; the neurobiological basis of metacognition.

- Module 3: the pedagogy of mistakes; the role of feedback; the principles of Universal Design for learning (Rose, 2000); Making learning visible (Ritchhart et al., 2011; Perkins, et al., 2000; Tishman et al., 1995; Mughini & Panzavolta, 2020); working in small groups, brains, and social skills; research material for teaching.

Videolessons were combined with webinars for synchronous interactions between teachers and researchers. These meetings were not dedicated to delivering new content but to discuss the content that was perceived as more difficult and to share thoughts, impressions, and possibilities for their use into the classrooms. Since these meetings included the entire team, they represented a significant moment for reflecting, comparing, and collaborating.

In the course model, an important role is played by the course e-tutor, whose function is twofold: on the one hand, the tutor supports collaboration, discussion and questioning in the online platform, acting as community manager; on the other hand, being a subject expert, s/he can provide further clarifications on the video lesson contents and on study material. In this case, there were two e-tutors.

Each module foresaw one activity - done individually or in group - to be sent through the platform. This task, called “etivity,” was intended to provide constructive feedback to the teachers by the researchers. It was a way to

come to a collective construction of knowledge about how neuroscience can be applied in classroom in different educational levels.

### **Co-designing learning opportunities**

In the educational domain, the word “to design” (in Italian “progettare”) strongly recalls the Latin origins of the term, or “pro-iectum” which means “to throw forward.” A project is therefore a projection or anticipation that the mind makes about events and actions that must be implemented or managed to pursue a specific purpose (Bonaiuti, Calvani, Ranieri, 2007). At the same time, the verb “to design” recalls the ability to adopt new objectives and be able to read new needs, considering the knowledge and its representation in a flexible way. Furthermore, this perspective takes into account the human dimension by evaluating not only the products but also the processes implemented, regardless of whether they were initially designed or not.

This means that the design activity is not configured in a rigid and limited way. On the contrary, learning design is meant as a complex structure of literature references but based on a circular process of dialogue between action and reflection on action (Dewey, 1994) that can be enhanced by sharing practices between professionals.

Research on collaborative design in the educational field has led to the structuring of a vast wealth of literature on the subject focused on three main focuses of attention: the benefits of collaborative design, its mechanisms and its enabling conditions (Cober, Tan, Slotta, So, & Könings, 2015; Cochran-Smith & Lytle, 1993, 2009; Hubers, Poortman, Schildkamp, Pieters, & Handelzalts, 2016; Pareja Roblin, Ormel, McKenney, Voogt, & Pieters, 2014; Fabbro, Gabbi, Ranieri, Pellegrini, 2022)

Regarding the benefits of collaborative design, there is wide convergence among authors in recognizing the value of collaborative design both with respect to design approaches and for the development of sustainable and transferable teaching practices (Cober et al., 2015; Cochran-Smith & Lytle, 2009; Pareja Roblin et al., 2014).

In this regard, Voogt highlights important implications also about the professional development of the teachers involved, highlighting that “Collaborative design positively affects both professional development and the implementation of curriculum change, because teachers develop competencies and practice and develop ownership of the change.” (Voogt et al., 2016, p.121). Furthermore, through a wider sharing of ideas and perspectives, the teaching materials created as part of the co-design process have higher levels of sustainability through the use by teachers not directly

involved in the process (Gendole, 2013). The co-construction of the contents leads to the definition of tools that are not the result of individual teaching experiences but of conceptual and perspectival mediations.

Designing in teams has been shown to foster teacher learning and sense of ownership, since teachers draw on existing knowledge and share new insights during the collaborative creation of material.

Findings suggest that teaching design discussions are dominated by brainstorming and that learning opportunities are present when complex problems are addressed. Also, the research showed that teachers are naturally inclined to focus primarily on practical problems, but external support can stimulate more in-depth analysis and strong commitment (Boschman, 2015).

As regards the factors that influence the effectiveness of co-design, the research highlights that co-designing is highly beneficial and leads to an increase in professional skills, favourably affecting the design itself.

Another interesting aspect is that the active involvement of teachers in collaborative curriculum design can improve the harmonisation of the formal curriculum and improve the accuracy of educational proposals by teachers (Penuel, McWilliams, et al., 2009). Such an active involvement can only be effective when teachers feel the need to change their practice, are convinced that their efforts will lead to actual changes, and that they are able to do so (Becuwe et al., 2015; Morris & Hiebert, 2009).

In relation to the enabling conditions, the presence of a person mediating and supporting interactions among teachers is crucial (Binkhorst, Handelzalts, Poortman, & Van Joolingen, 2015).

Equally important is the scaffolding of managers. Efforts to improve the quality of teaching through collaboration must account for the creation of a trustful climate (Penuel et al., 2007). This trust allows school leaders and teachers to have greater freedom and willingness in making difficult decisions, creates a clearer understanding of limits and constraints, and supports the community commitment to improve student achievement.

### **Contribution objectives and research methodology**

Various moments of data collection were established, according to the objectives. The first year, in which the teachers participated in the training course, questionnaires were administered to the teachers before the start of the course (T1) to investigate the previous knowledge on neuroscience in the classroom and their expectations towards the project; later on, at the end of the course, another questionnaire was administered to evaluate lessons learned and their change in mindsets (T2).

Similarly, the second year saw two moments of administration: pre-post moments in relation to the application in the classroom. Questionnaires were administered both to teachers and to students. The latter were mainly asked for their attitudes and opinions with respect to the activity in the classroom. Together with quantitative data, qualitative data was also collected, especially looking at the written tasks produced by the teachers: in a previous contribution (Mori et al. 2022) teachers' thoughts gathered thanks to the use of Thinking Routines (TRs) were reported, as a moment of reflection on their personal, professional change.

In this contribution we intend to analyse the lesson plans made by teachers, drawing on the principles, the contents and the stimuli offered in the training course.

Lesson plans were conceived at the end of the training course, having in mind the following school year. What we are interested in understanding is what themes had the most impact on teachers in terms of their willingness to use them, what methodologies were selected as most appropriate to implement them and the words used to explain their intentions.

The questions leading this phase of data analysis are as follows: "What course content was most chosen by the teachers?" "How were the activities planned and embedded compared to what they are already used to doing? What methodologies and tools are preferred to embed brain-based evidence?"

The contribution has the objective of answering the following questions both for the overall group of teachers, considering both groups (A and B).

## **Methodology**

### ***Participants***

The research activities were conducted with the contribution of three schools, with a group of fifteen teachers on average. The composition of the whole teacher group is as follows: thirty-nine females and one male. Thirteen work in School 1, 11 in School 2, 16 in School 3. The majority (24 teachers) are from primary school, eight from lower secondary school, and three from kindergarten. As for their age, 17.5% are under 40 years, the majority are aged between 40 and 60 and only two are over sixty. As for the choices made by teachers, apart from the common tasks, each participant chose between one of the two activities (2A or 2B), differentiated by school level. As for the distribution of the completed tasks, 42,5% of teachers submitted the activity on kindergarten and primary (grades 1 and 2), called "activity A" whilst 57,5% worked on the one on primary (grades 3, 4

and 5) and secondary school, called “activity B”. Some of them decided to submit both activities.

### ***Lesson planning tools***

To support planning activities within schools, the researchers invited teachers to form groups of 4-5 people from the same school (or mixed up together) to co-design activities to be carried out in the classroom at the beginning of the following school year to ease the transition from one educational level to another. No indications were given as for content to be covered, if they were connected with the course content. Teachers were free to imagine personalised ways to bring brain-based research into their classrooms.

The online platform was used to allow teachers to meet, co-design and discuss their proposals with their peers and the researchers, who, during synchronous meetings provided feedback and suggestions for improvements. Those occasions were also very useful to share at a wider level, outside each one’s own working group.

The design sheet that was provided to them to organise their planning encompassed several sections: the first part of the form was dedicated to connections with the course contents, since one of their research questions was on the most selected topics.

The intent was to make the correlation between contents and design explicit and to understand which were perceived as more beneficial to educational continuity.

In the lesson planning form, teachers had to mention the intended targets, curriculum topics and the educational methodologies they would use to embed brain-based research into their daily practice. To have consistent planning, teachers were explicitly asked to take the coherence of all sections into account.

The activity had then to be detailed in terms of times, phases, and actions, recalling the brain-based literature. In relation to this latter aspect, what was particularly interesting to note is why teachers considered that piece of evidence as essential to their teaching practice.

Finally, teachers were asked to identify any technologies they would use in the lesson, even though this aspect was not central.

The last section was dedicated to the learning process documentation.

The design sheet is not a particularly innovative tool but has proven to be very useful in clearly defining all main teaching elements.

Despite this, some teachers found this tool a bit complex and needed support from the researchers to become ready to use it.

## ***Procedures***

The analysis of teachers' plans was carried out with the Lexico 5.8.1 software: in a first phase, the words were analysed in an exploratory way by observing the number of occurrences in their writings; at a later stage, tags based on course contents were used to index the entire corpus of data. To understand the peculiarities of the two groups (A and B) Wilcoxon's test for dependent samples was used. This measure was necessary because there are teachers who come from the same school and therefore from the same population. Furthermore, the use of a non-parametric test is due to the distribution of the number of words, which is undetermined and, certainly, not normalised.

## **Results**

Six lesson plans were presented from the three schools. The groups are all made up of colleagues from the same schools. Three out of six plans involve the kindergarten and primary school (grades 1 and 2); the remaining three are for primary (grades 3-5) and lower secondary schools.

For kindergarten and primary school (grades 1 and 2) teachers have imagined the following activities:

- *The book "speaks."* The design focuses the use of illustrated books to encourage attention and recognition of emotions, by using mindfulness.
- *Ortho-botanical and social garden.* The design deals with creating an educational garden where students can work in small groups, combining the importance of movement and outdoor learning.
- *The power of storytelling.* The design focuses on widespread use of reading aloud to improve students' attention and metacognitive strategies.

As for the plans of primary (grades 3-5) and lower secondary teachers, the contents are as follows:

- *Active teaching: self-regulation of learning and the neurobiological basis of metacognition.* The goal is to improve the ability to create and solve mathematical problems by improving attention and reflection skills of students on their actions.
- *Building a brain-friendly lesson:* using Retrieval and Rehearsal techniques across the different disciplines.

- *Error analysis for improving the relationship*: the concepts of feedback and empathy at the heart of building the relationship between teachers and students.

In the first part of the worksheet, teachers were asked which course topic had inspired their planning. The analysis of the tags shows (Fig. 1) that the most used terms are "learning", being the goal of their plans, followed by the terms "group", "emotions", and "motivation".

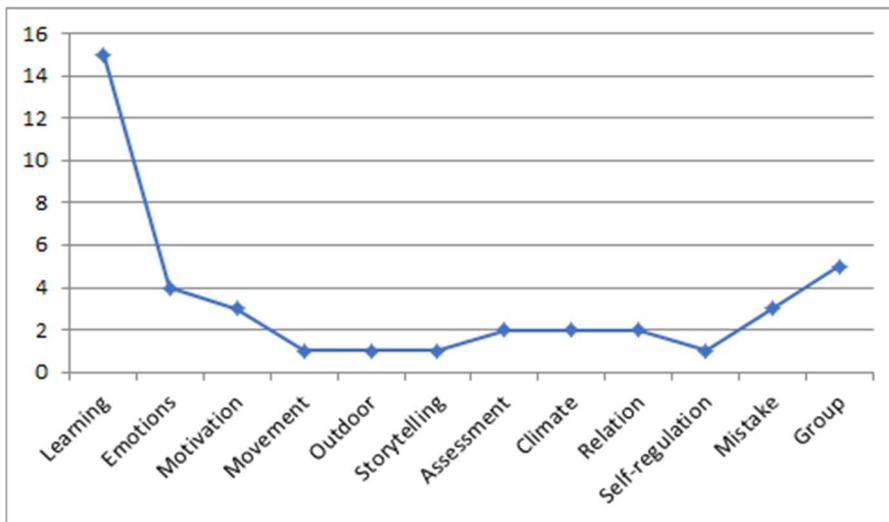


Fig. 1. Frequency of tags in teachers' plans.

As regards the difference in the use of topics in groups A and B, statistically significant differences were found (Fig. 2).

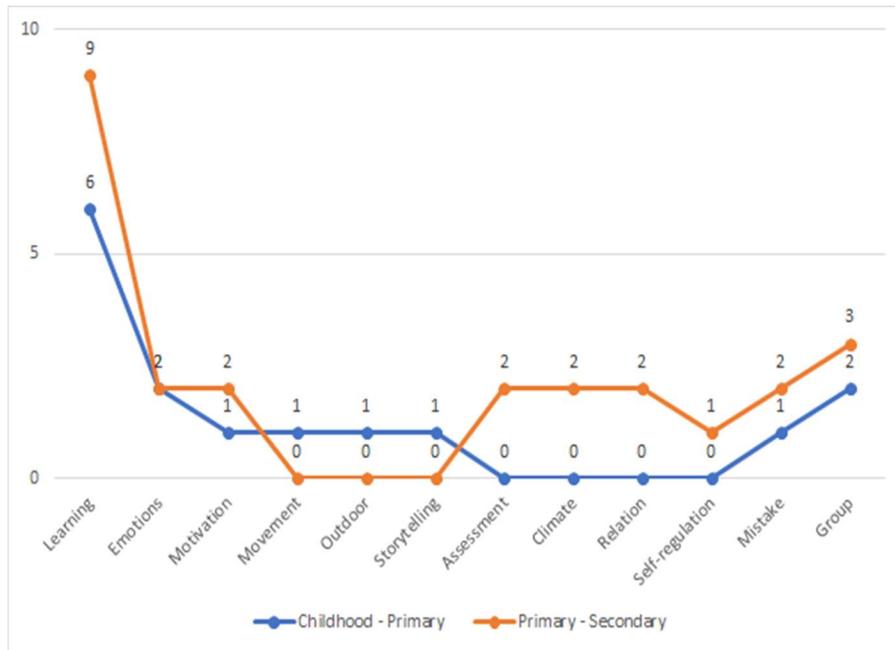


Fig. 2. Difference in frequencies between the topics chosen in the two groups ( $V = 12$ ,  $p = 0.060$ ).

Learning is a recurring topic, especially in the plans made by teachers for older students, where terms relating to the classroom climate, the assessment and the concept of error are predominant. In the teachers' plans for younger students, concerns related to the use of the body and the space appear to be predominant.

These topics were chosen based on the video lessons presented in the course and these choices are significantly different between the two groups (Fig 3).

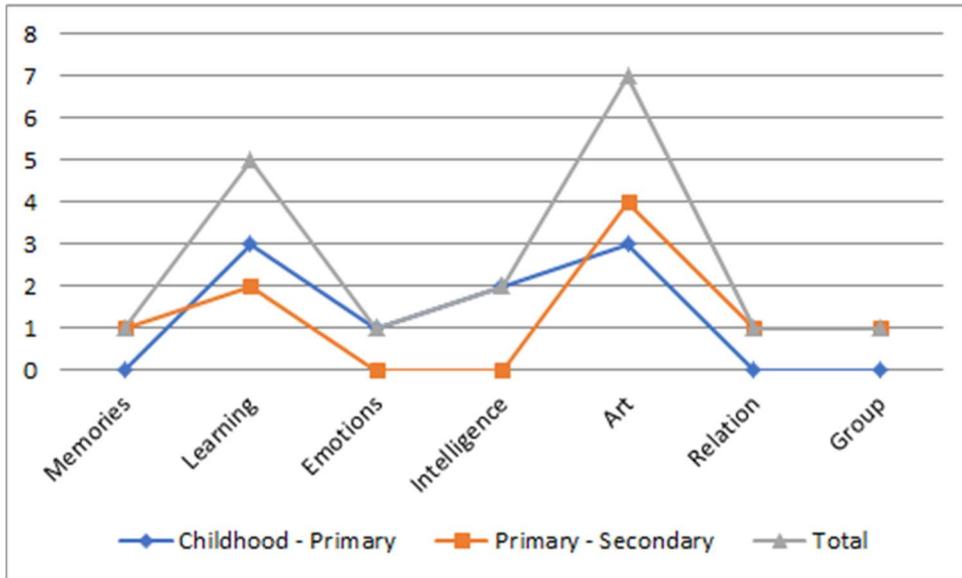


Fig. 3. Topics related to the success of brain-based teaching presented in the course ( $V = 0$ ;  $p = 0.01$ )

In the planned activities, statistically significant differences were found between the two groups (Fig. 4)

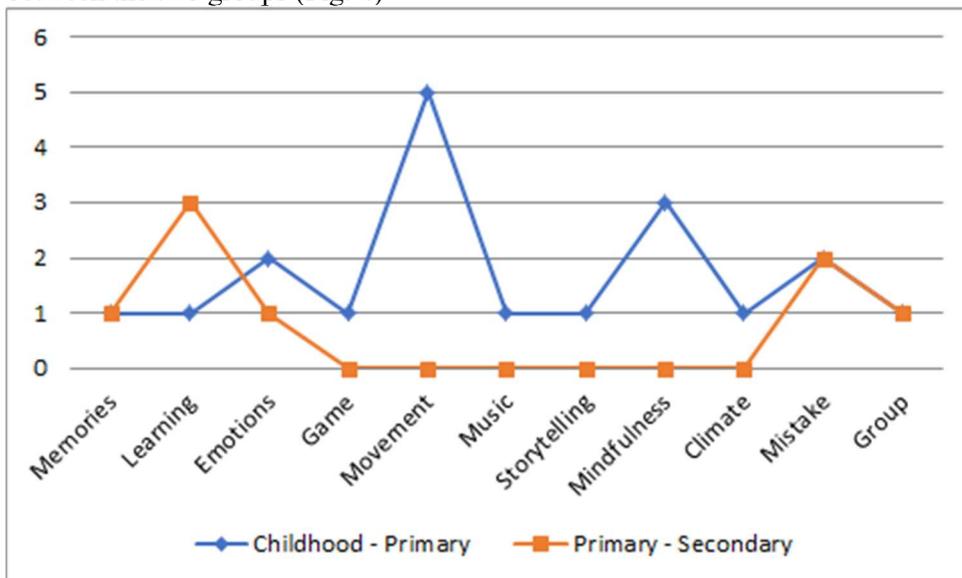


Fig. 4. Activities and topics covered in the plans from the two groups ( $V = 30$ ;  $p = 0.09$ )

In defining why these topics are relevant to them for improving educational continuity, the area of "relationship and communication" among students and teachers is the most mentioned (Fig. 5).

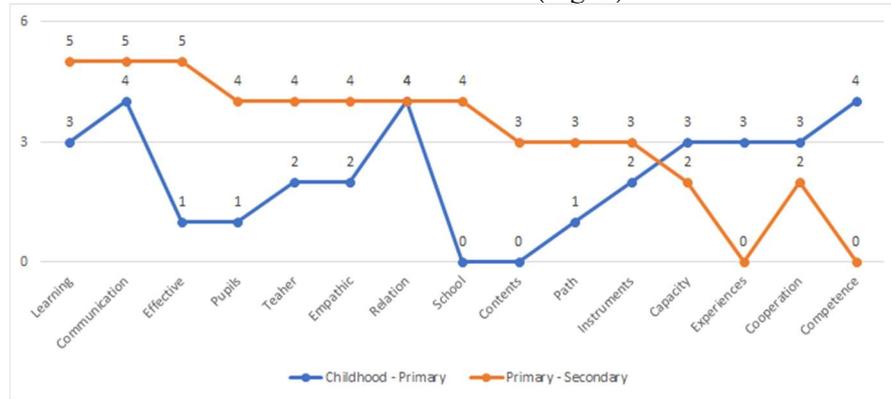


Fig. 5. Difference in frequencies between the topics considered as facilitators of educational continuity in the two groups ( $V = 34$ ,  $p = 0.045$ ).

Regarding the differences between the two groups, it is worth noting that educational continuity, for older students teachers, deals mainly with aspects such as empathy, role management and the management of time, whilst for younger students teachers the focus is on the importance of creating opportunities for experiencing continuity, developing an adequate approach to study and to work on collaboration.

Regarding the contents of the plans, there are no significant differences in the terms used (Fig. 6).

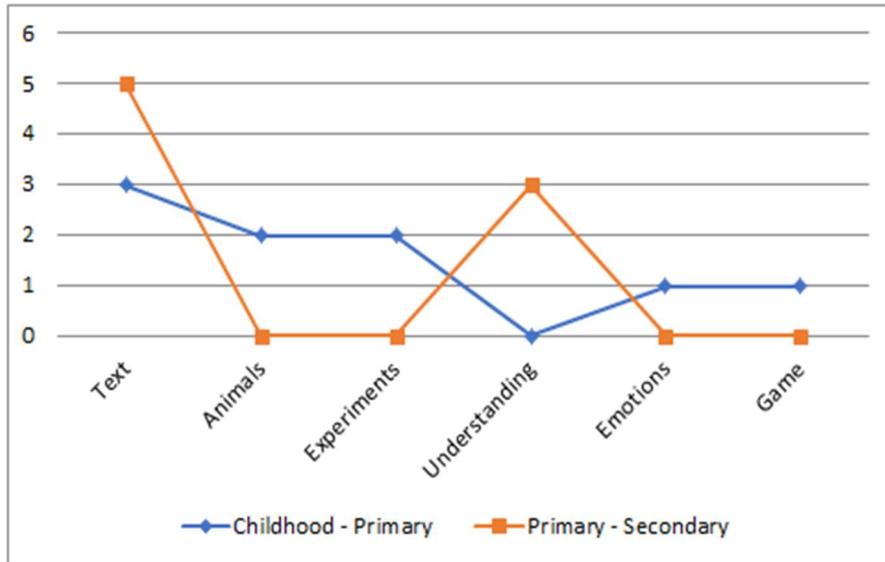


Fig. 6. Contents of teachers' plans in the two groups. ( $V=4$ ;  $p>.05$ )

Text-based materials are used in both groups; for children, the use of animals, play and hands-on activities is predominant, while for older students, teachers prefer to concentrate on the understanding process and on argumentation.

As regards the methodologies used, differences can be found between the two groups (Fig 7).

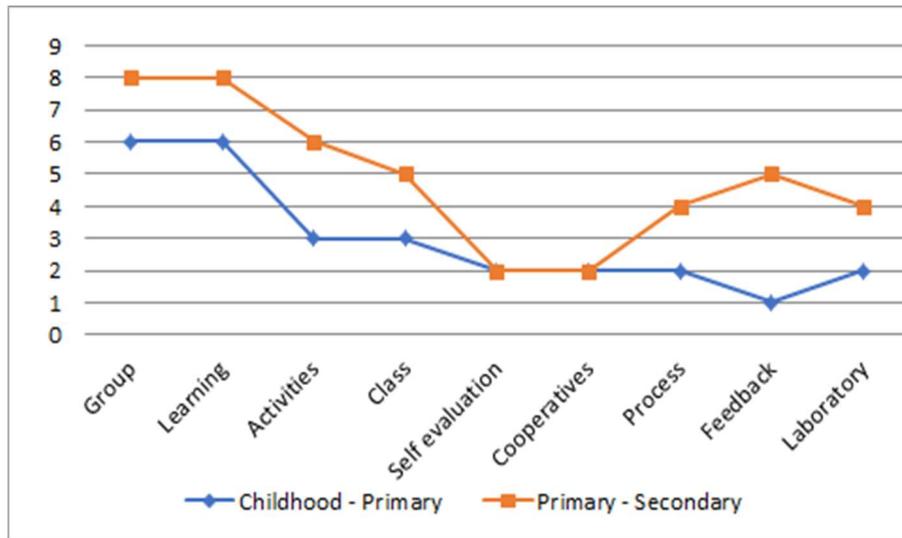


Figure 7. Methodologies envisaged by teachers in their planning (V = 0; p = 0.011)

In line with comments about the preferred contents, methodologies are also statistically different between the two groups: the choice to work on the feedback and potential of the group for learning is greater for older students; for younger children, the aspect of learning by doing and inductive approach are more considered.

## Discussion

### *Group A - kindergarten and primary school (grades 1 and 2)*

The first aspect worth noting is undoubtedly the actual opportunity to plan teaching activities together, not only for the topics themselves but for the methodological approach. Both groups highlighted the existence of a gap between the planning and the proposals that are doable in kindergarten and in primary school. The literature on the “readiness,” supported by both psychological and pedagogical research, clearly highlights the delicacy of this transition phase (Eckert et al., 2008; Mariano, 2019; Potmesilova & Potmesil, 2021).

School readiness is a complex concept that is foundational to early childhood systems and programs (Majzub & Rashid, 2012). School readiness means that children are ready for school, families are equipped to support their children's learning (Chazan-Cohen, 2009), and schools are ready for

children. School readiness is, briefly, the possession by children of the skills, knowledge, and attitudes necessary to be successful in school and later in learning and in life. Physical, cognitive, social, and emotional development are all essential ingredients of school preparation.

The preparation of a methodological approach but of ways of thinking and of developing knowledge, which in part guarantees continuity, undoubtedly represents an aspect that can facilitate this important step. The possible positive implications were identified by the teaching team both as regards the children and the primary school teachers who welcome those very young students.

The methodological focus has therefore been shifted from the peculiarities of the proposed activities to the ways of elaborating the functioning of the brain, therefore from the teaching content to the learning process.

As regards the teachers of the kindergarten, it is interesting to observe that many of the activities traditionally proposed in this educational context match with scientific evidence found by neuroscience in the educational context. Above all, the value of play and movement as tools for growth and sociality are highlighted. By reconsidering the readings that look at them mainly as moments of leisure and recreation, they were also included in the design of primary school teachers.

Both groups paid attention to the well-being of their class, highlighting the value of mindfulness and outdoor learning. The use of outdoor settings increased during the Covid pandemic: therefore, finding support in research for its use in formal curriculum was important for the teachers. Among the difficulties found in children's attitudes there was the one concerning attention. The teaching teams showed high interest in designing lesson plans capable of supporting children's attention and set very high "attention" objectives in this regard, highlighting the trust they gained from the course.

The plans show clearly a deep effort of reflection from teachers on their own learning experience, based on re-elaboration of the contents, analysis of their contexts in the light of new "insights" and attempts to change their daily practice.

The co-planning was facilitated by having a common cultural background which represented the basis for mutual understanding when personalising the plans to their own, specific classes.

### ***Group B - primary school (grades 3-5) and lower secondary schools***

In line with the cognitive development of students, teachers in these grades consider higher order thinking skills (Ritchhart, Church & Morrison, 2011) in their lesson plans more than their colleagues in Group A. What was crucial for them is the ability to design (Laurillard, 2002) effective learning opportunities for their students; enhancing student autonomy, self-regulation of learning and metacognition are the main priorities in this group of professionals.

Another complex cognitive process that was considered is the readiness to solve problems, nurturing both rational and creative/divergent thinking (Bruner, 1986). However, to support high order thinking skills, teachers also mentioned the importance of maintaining student engagement (Deakin Crick, Stringer & Ren, 2014) high; therefore attention, memory and self-wondering in students were regarded as essential components and were included in their plans. In one plan we found this strong focus on retrieval and rehearsal techniques (part of the memory system) across the different disciplines.

The performative theory of learning (Perkins & Blythe, 1994) emphasises the importance for a person to do something with what one knows. The European concept of competence encompasses contents, abilities, and attitudes (Castoldi & Martini, 2011) and group B teachers seem to be perfectly aware of it.

Two other elements are particularly important for this group of teachers: the pedagogical use of errors and the concept of feedback as formative assessment. They are essential levers to promoting autonomy and self-regulation of learning (Schunk & Zimmerman, 2012). Formative assessment can be defined as a process where the teacher, during the lessons, formalises the knowledge and skills of the students by providing (corrective) feedback and adapting his teaching strategies to improve the learning of each and every one, as a sort of corrective biofeedback for accommodating neural connections (Immordino-Yang, 2012).

Another major takeaway for the teachers of group B is the role of emotions in learning and the relevance of the teacher-student relationship, where teacher empathy plays a crucial role. "It is literally neurobiologically impossible to think deeply about things you don't care about," Immordino-Yang (2012) says in this regard, putting upfront the role of students' interests and pleasure in learning dispositions.

Finally, compared to group A teachers, group B teachers focussed on the importance of the group in learning processes. This is in line with a robust body of research (Slavin, 2015; Lazarowitz & Karsenty, 2009; Cacciamnani,

2004; 2008) considering cooperative learning and peer tutoring/mentoring as the most effective methodologies for students' achievement. As presented above, statistically significant differences have been found both for topic coverage and for methodologies from trained teachers in this regard ("group" is more used in group B than in group A).

### **Conclusions**

The objective of this contribution was to analyse the plans conducted by the teachers at the end of the training course, based on the principles for brain-based teaching.

We intended to understand what the content was, and which methodologies were chosen by the teachers to improve their teaching. The plans seem to confirm that the possibility of having co-design opportunities has given teachers the chance to rethink their actions having in mind both evidence-based neuroscience research and feasibility criteria (Cober et al., 2015). Teachers' preferred topics were, in both groups, connected with what the teachers already knew; however, the knowledge gained during the course gave them the possibility to better frame their knowledge with the brain-based studies. The analysis of Thinking Routine activities (Mori et al., 2022) highlighted that the most relevant discoveries for them were the contents dealing with the role of emotions in learning and the importance of empathy in the educational relation. Teachers' plans show this finding even better. In fact, the topics selected by teachers for their lesson plans are meaningful in this regard: for the little ones, teachers focus on the importance of play and storytelling, the need to develop the potential of each student considering the neuropsychological basis of development and the centrality of processes in this early stages of their life (Immordino- Yang, 2016). For older students, problem solving, argumentation and reflection on error were the most dealt with topics.

As for learning environments, teachers seem to decrease their attention to them as the age of the students increase: whilst kindergarten teachers consider outdoor learning as key to kids' development, thanks to the potential of body movement, lower secondary teachers emphasise cognitive and metacognitive dimensions the most. However, there is a common thread in both groups, which is the focus on empathy and teacher-student relationship perceived as a central element in granting the quality of daily activities. The training project and the co-design activity therefore seem to have allowed an active reflection on what works and what does not in the classroom, drawing on brain-based evidence of learning processes. Next, we would like to understand whether these lesson plans are connected to the

final evaluation questions of both teachers and students to understand how they were really implemented in the classroom.

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# **Active, Constructive, Interactive... Co-creative! Suggestions for a participative instructional and assessment design**

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## **Abstract**

Teachers generally refer to the term "active learning" to describe student-oriented teaching and learning practices. Even if recognizing and appreciating the complexities of this approach, it is essential to approach the design phase effectively. The paper aims firstly to support the acquirement of the knowledge related to the "Interactive, Constructive, Active, and Passive" and the "Co-creative teaching and learning" models; secondly, to apply these frameworks to assessment, focusing on feedback strategies that can enhance the students' agency at different levels of complexity.

**Keywords:** Student-oriented learning; ICAP model; Co-creative teaching and learning; Student-oriented assessment; Feedback.

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<sup>1</sup> The responsibility of single paragraphs should be attributed as follows: to Roberta Silva paragraphs 2 and 4; to Alessia Bevilacqua 1 and 3.

## **Introduction**

The term "active learning" is often used to describe student-oriented teaching, learning, and assessment practices that lead the students to motivational engagement. However, teachers can resort to many different models to understand the complexity of cognitive engagement and, consequently, realise an effective instructional and assessment design. The 'Interactive, Constructive, Active, and Passive' (ICAP) framework enables the teachers to understand how to support the students to become more engaged with the learning materials, from passive to active, to constructive, to interactive, so that their learning will increase (Chi & Wylie, 2014). The teachers can take a further step toward even greater student responsibility by using the 'Co-creating teaching and learning model', which implies a meaningful collaboration between the students and the teachers by assigning to the students an active role also in the definition of teaching resources and strategies (Bovill, 2020). When the constructive alignment model (Biggs, 2003) is used for instructional design, it is advisable to adopt the same orientative framework for the assessment strategies. Encouraging an active, constructive, interactive, or co-creative approach to assessment means making the students protagonists by promoting their agency on levels of increasing engagement. The element that unites the four different models is the enhancement of the feedback strategies that could be activated to support the students who are engaged in formulating evaluative judgments and giving meaning to the information contained into the feedback, thus orienting their cognitive processes in relation to the learning objectives.

### **Active learning: a complex taxonomy**

Active learning is a powerful weapon at the service of educational change able to move the focus from "teaching" to "learning", giving centrality to the students. The adherence to a student-centred perspective brings with it a second implication, often overlooked. Putting the students at the centre of the didactic action, in fact, also means to assign greater emphasis to their responsibilities, by making them no longer simple "users" of an action decided by others but "partners" in their learning, improving their responsibility (Kimonen & Nevalainen, 2005; Jeffrey, 2006; White et al, 2016). However, a conscious adherence to active learning cannot be accomplished without adequate reflection and awareness. This is because, in the first place, the concept of active learning is more complex and multifaceted than what a superficial view might suggest. Furthermore, as some scholars have pointed out, the introduction of this type of didactic

innovations within the teaching practice can also trigger a sense of disorientation capable of becoming resistance to change, both on the part of the teachers and on the part of the students (Michael, 2006; Kimonen & Nevalainen, 2005, Townsend & Bates, 2007). For these reasons, it is necessary to deepen the definition of active learning, its characteristics and potential, but also its criticalities. Moreover, it is necessary to hypothesize, starting from all this, how to find a way capable of enhancing its effectiveness by reducing possible obstacles.

### ***Active learning: what does this mean?***

In the scientific literature, there are still numerous cases in which the concept "active learning" is simply defined in opposition to "passive learning". According to this vision, passive learning implies poor engagement of the students because the focus is on the teacher and his/her way to present the disciplinary content is the main way through which the students' motivation can be supported. On the other side, active learning requests a strong involvement of the students in the learning process in which the teacher assumes a guiding role, paying special attention to the motivation of his/her students (Petress, 2008).

This definition of active learning undoubtedly has the merit to emphasize the fundamental aspect of the different vision of learning that is implied in this way of teaching. Passive learning, in fact, refers to a deductive approach, according to which knowledge is a cohesive corpus and the teacher has the task to "show" it little by little to the students, for the fact of being an "expert". It is called "deductive" because the teacher presents general rules or concepts to the students, and then describes how these rules or concepts can be "applied" in real contexts. Therefore, learning is a journey "guided" by the teacher, who strictly maintains control of the entire process, and the theory of learning that guides it is behaviorism (Price & Felder, 2006; O'Donnell, Reeve, Smith, 2011). On the contrary, active learning adheres to an inductive approach, in which knowledge is something "articulated," and the task of the students is to "discover" it little by little, starting from a personal elaboration. They are firstly asked to use the information and knowledge they already possess to "explore" the areas of knowledge that are unknown to them, and subsequently to systematize the new information processed through this act of discovery into cognitive structures. According to this vision, learning is therefore a journey of discovery in which the students are the protagonists, and the theory of learning that underlies this approach is constructivism because the students are not only asked to

“absorb” new concepts but to “build” them through a personal investment (Price & Felder, 2006; O’Donnell, Reeve, Smith, 2011).

This definition gives little information about what an active learning strategy should “look like.” Indeed, Bonwell and Eison underlined that the concept of active learning is often defined as “intuitive,” and they emphasize the need to elaborate on a precise definition of it (1991). These scholars actually identify three characteristics that a teaching strategy should possess in order to be defined as “active learning”: a) it must convey learning through a concrete action in which the learners are directly involved; b) it must be committed to make the students aware of the responsibility they have in the learning process; c) and finally it must be able to develop not only disciplinary skills but also soft skills (Bonwell & Eison, 1991).

Although this definition is undoubtedly a milestone in the scientific literature dealing with active learning, in recent times some scholars have developed new taxonomies that, starting from what is outlined here, have more precisely detailed the characteristics and facets of this type of teaching/learning action. One of the most stimulating is the one created by Michelene T.H. Chi.

#### *Active-Constructive-Interactive*

Michelene T. H. Chi highlights that many scholars have emphasized how active learning involves not only an «active process», but also a «constructive process» and an «interactive process» but these aspects are often not precisely detailed (Chi, 2009, p. 74). For this reason, Chi creates a taxonomy that specifies these three “levels” of active learning, indicating for every “level” its characteristics, concrete activities and cognitive processes: this taxonomy “basically offers a way to differentiate active from constructive from interactive, in terms of overt activities and their corresponding underlying processes that may mediate learning” (Chi, 2009, p. 98).

As regards the level “active”, this has a relevant connection with the discovery learning, because the students are asked to “do something” by acting on the knowledge that they are called to acquire. The concrete activities related to active processes require engaging activities, such as highlighting or selecting keywords or concepts, paraphrasing crucial parts of a text, or modifying concrete objects. The cognitive processes implied in these activities involve an exploration, assimilation, and manipulation of knowledge (Chi, 2009). The aim of active processes in learning is to engage the learners, but this involvement must be focused and contextualized: one more step can be taken.

The constructive processes indicate actions in which the students do not only explore, assimilate, and manipulate the existing knowledge, but they also «go beyond the presented information» to create an organically structured original elaboration and consequently develop new knowledge (Chi, 2009, p. 77). The activities connected to this level are, for example, the construction of a concept map or the elaboration of a hypothesis aimed to explain the connection between different phenomena. The cognitive processes implied in these actions are, for example, the elaboration of new knowledge starting from other information or the integration of this knowledge into an existing framework (Chi, 2009). The constructive process diverges from the active one because, in this case, the action in which the students are involved is aimed at the creation of a concrete output that "contains new content-relevant ideas that go beyond the information given" (Chi, 2009, p. 78). In other words, the output produced by the students is not only a "selection" of the relevant parts of the knowledge that they are called to "manipulate", but it is something new, something that gives life to a new meaning, through a process of interpretation /creation. This means that the production of different types of activities can be defined constructive only if the outputs contain ideas that go beyond and are not explicitly presented in the learning materials (Chi, 2009).

Finally, the interactive processes refer to a learning, which is not only characterized by an active and creative "dimension", but also by a dialogical one, thus interweaving several contributions. The activities involved in this level are, for example, the elaboration of feedback about the actions of the other, but also the review of one's own work starting from the contributions of the other or the collaborative creation of a common product. Consequently, the main cognitive process involved in it is the incorporation of different contributions into the same creation (Chi, 2009). The interactive process can "take life" in many different ways: it can assume the form of a dialogue among different people (among students, between students and teachers, etc.), but it can also be represented by the interactions between a student and a Response System, or by the co-action of two or more students on the same assignment, as long as it is accompanied by a verbal bargaining that organizes a joint action in which both partners "re make substantive contributions on the same concept or topic" and "neither partner ignores each other's contributions" (Chi, 2009, p. 81).

As it clearly emerges from the description of the taxonomy proposed by Chi, it is organized according to a "gradual" logic: the active process is, obviously, the fundamental base of active learning. It is something like "a first step" because it is what implies the students' exit from a passive state. Nevertheless, the basic involvement foreseen by the active process can be

made deeper through the constructive process, which can be added to the first one. When a learning moment does not only involve an active process but also involves a constructive process, the involvement of the students becomes stronger because "being constructive means that a learner is creating new inferences and new connections" (Chi, 2009, p. 88). Finally, the third step is represented by the "interactive process" that allows the students, through a reciprocal confrontation, to develop a more complex and articulated acquisition of knowledge thanks to the possibility of enrichment offered by the contribution of the others, but also through the possibility to grasp and exploit the feedback of the others still respecting one's own thought. This construction follows a progressive vision of active learning, according to which it is not a "monolithic" concept, but has, within it, many shades that can be articulated according to a developmental perspective (Chi, 2009).

This progressive vision is underlined by the subsequent evolution of the taxonomy developed by Chi and Wylie, namely the I-C-A-P (Interactive-Constructive-Active-Passive) Taxonomy. The scholars have inserted a "step 0" in the already outlined path (which involved the articulation in Active-Constructive-Interactive) precisely to further underline the gradual growth that this model envisages. This is because, according to the authors, reasoning in terms of progression and detailing this evolution in terms of characteristics, concrete actions and involved cognitive processes, allows the teachers to use these concepts in a professionalizing perspective or as a sextant to reorient their own practice of teaching and gradually introduce modifications in the students' actions in order to help their transition from "passive" learning, which goes through the steps described here, towards "interactive" learning (Chi & Wylie, 2014).

### ***No more problem?***

So now we do not only know that active learning promotes a deeper gaining of disciplinary content and allows the students to achieve learning outcomes also concerning the development of soft skills (Michael, 2006), but we also know that the teachers can be supported in the "transformation" of their teaching actions from a "passive mode" to an "interactive mode" that brings the potential of active learning to the highest level (Chi & Wylie, 2014). Then... what's the problem? Why is active learning not yet the only teaching model in our education system?

It is not as easy as it seems. Firstly, even if the creation of self-training materials dedicated to the teachers can be very useful for promoting a process of self-awareness in them, to achieve real change, it is necessary that this

evolution is supported in the teachers through specifically designed training actions to support them in this professional development.

Moreover, the teachers must also be adequately trained to develop design skills related to didactic actions: indeed, even without a specific focus on instructional design, Teacher Education can provide to these professionals the skills they need to put in action the gradualness, which is essential to maximize the effectiveness of active learning<sup>2</sup>, integrating it in a coherent way within the learning design and lessons plan (Børte, Nesje & Lillejord, 2020). This is a structural element that can negatively impact the effectiveness of active learning, but it is not the only one. There is another one, more elusive and for this very reason more difficult to identify and face, capable of having a deep impact on the daily life of teaching and learning experience: resistance to change.

Both students and teachers can feel a resistance to change: as regards the teachers, to adhere to the active learning approach, means to be able to consciously shift to a different pedagogical framework, very different from the one to which they are used and that has characterized the main part of their personal and professional growth and this implies a radical revision of their role (Kimonen & Nevalainen, 2005; Børte, Nesje & Lillejord, 2020). To support the teachers in this process, in addition to what has already been presented (i.e. focused and punctual training courses and self-training tools capable to support a process of conscious change), it is also necessary to encourage them to develop a reflective vision of their own professional growth by putting this change within a significant path, in which the teachers can find their own meaning, through a personal attributive action, which is not a simple "acquisition" of an external model, but the conscious development of a new, intimately felt, perspective.

However, the students can experience resistance to change when they are involved in active learning activities, because this way of conducting the teaching and learning moments is very far from the way they are used to. Indeed, a "sudden change" that involves their learning habits can produce in the students a sense of disorientation: without warning, in fact, they feel catapulted from the audience to the centre of the stage, without having voluntarily chosen it and without having been prepared for it. These feelings can produce in the students a diametrically opposite outcome compared to the one we are perceiving through active learning, namely a frightening retreat from the didactic moment, thus reducing their participation to a

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<sup>2</sup> In this regard it is useful to remember that gradualness is one of the main characteristics of the framework proposed by Michelene T.H. Chi.

minimum, which therefore assumes only a formal character (Springer, Stanne, Donovan, 1999; Prince, 2004, Ambruster et al, 2009).

From an operational point of view, there are some suggestions that aim to support the teachers in developing teaching actions able to support the students' compliance to active learning, thus maximizing its effectiveness. One of these suggestions seems to be particularly "consistent" with Chi's taxonomy because it encourages the teachers to gradually introduce active learning strategies in their teaching by starting with the ones that imply a limited "activation" of the students in order to reach, only when the students will be "comfortable" with this teaching approach, the more complex ones, in which the students are asked to be more and more autonomous and dynamic. This suggestion starts from an awareness of the emotional dimension that every learning process brings with itself, which assumes relevance in active learning by virtue of the strong responsibility that this approach brings with itself (Tharayil et al, 2018).

Despite that, this way of "facing" the problem, even if coherent with the outline and certainly effective, may not be sufficient since it does not act on the root of the problem, that is the students' feeling of disorientation caused by the impression of "not having control" over the choice of teaching methods. It is starting from this consideration that the proposal outlined here envisages, by starting to take a step forward, to integrate Chi's taxonomy with the approach of co-creating learning and teaching.

### ***Co-creating learning and teaching***

Then... How can the connection between Chi's taxonomy and the Co-creating learning and teaching approach come to life? Firstly, as we have already defined the characteristics of the Chi's taxonomy, now we need to gain more details about the Co-creating learning and teaching approach.

Co-creating is defined as a collaborative method, based on reciprocity, in which the different actors (teachers, students, tutors) contribute, albeit in different ways, to the processes of planning, implementing, and evaluating learning activities. It is not configured as a monolithic model, but on the contrary, it is a flexible tool, capable of taking on different "nuances" on the base of the specificities of the involved context and discipline. Nevertheless, the compass of all the co-creating experiences is the will to involve the students not only in the concreteness of the teaching actions, but also in the decision-making processes that underlie them (Bovill et al., 2016; Bovill, 2020).

Co-creating learning and teaching is an approach connected with the idea that the students can be prepared, within learning and teaching practices, to

assume not the role of users but of partners. This certainty is linked to the idea that a real involvement of the students can be reached through their stronger participation in various aspects of the learning process and this idea takes life in several perspectives and practices (Cook-Sather, Bovill et Felten, 2014; Bovill et al, 2016).

According to this perspective, co-creation is a way of conducting the learning and teaching moments in which teachers and students are asked to give life to a " meaningful collaboration" which requires the students to "become more active participants in the learning process, constructing understanding and resources with academic staff", thus sharing not only actions, but also the decision-making processes that are at the basis of these actions (Bovill et al. 2016, p. 197). For this reason, this approach is also linked to a participatory design, according to which, in order to maximize the effectiveness of the training experience, it is necessary to involve the stakeholders (including the students) in the definition of the key elements of the training activity, with specific attention to the sharing of the learning objectives and of the logic that underlies the teaching organization (DiSalvo et al. 2017).

The use of the expression "co-creation of learning and teaching" instead of "students as teaching partners" is due to the fact that, while underlining the co-participatory dimension of this approach, it still highlights that it does not imply an equal role between the students and the teacher: within it, the teacher does not abdicate his/her guiding role. Despite this "specificity", there are diverse ways in which the co-creating learning and teaching approach can take life: more precisely there are four different "roles" that the students can assume within this framework, namely a) representative, b) consultant, c) co-researcher, and d) pedagogical co-designer (Bovill et al, 2016; Bovill, 2019).

Coherently with the aim here drawn, we are going to focus our attention on the last one. The involvement of the students as pedagogical co-designers can assume different forms, by starting from their engagement in the definition of the learning objectives at the beginning of the course, up to ask them feedback about "what works and what does not work" within the course, passing through their involvement in specific moments during the lessons in which they are called upon to assume a direct responsibility in the elaboration or in the transmission of knowledge (Bovill et al, 2016; Bovill, 2019).

*A possible solution gained from integration*

To take responsibility is a crucial part of the co-creating teaching and learning approach, because becoming more able to assume responsibility (or at least part of it) within a process or an action, means becoming able to take on an "active" role in a more mature and conscious way.

And it is right this characteristic of co-creating that represents the "bridge" that allows the connection to Chi's taxonomy, making it able to "overcome" the obstacle represented by the students' resistance to change. Indeed, co-creating learning and teaching, according to its characteristics, is helpful to contrast the emotional stress connected to resistance to change, because it makes the students "part" of the learning process from the "very beginning", promoting in them a sense of belonging to the learning experience and developing a progressive "internalization" of their capability to "manage" the emotions generated by this new experience.

Starting from the premise that the union of the Chi's taxonomy with co-creating can represent a way to maximize the effectiveness of active learning, thus reducing its impediments, how is it possible to do this from an operational point of view? How is it possible to organize the didactic structure of a path that integrates these two approaches?

The first thing to say is that the intertwining methods could be multiple and precisely this flexibility represents a strong point of this mixture. Here we are going to present one of the possible articulations, starting from the experiences carried out within the course of Theories and Methods of Teaching and Learning, within the Combined Bachelor and Master's Degree Course in Primary Teacher Education. The course consists of 60 hours, organized in two macro-sections for a total of 20 lessons (first macro-section lessons 1-10, second macro-section lessons 11-20).

*Table 1 - Structure*

<b>Co-creating learning and teaching</b>				
<b>Premise</b>	<b>Active</b>	<b>Constructive</b>	<b>Interactive</b>	<b>Full swing</b>
<i>Lesson #1</i>	<i>Lesson #2</i>	<i>Lesson #3-5</i>	<i>Lesson #6-10</i>	<i>Lesson #11-20</i>
The teacher presents to the students: • the structure of the course; • its objectives,	The students are asked to act on the knowledge that they are called to acquire through an	The students are asked to start from "the known" to create an original elaboration, developing	The students are asked to work together to create an original elaboration, interweaving more contributions,	The different actors contribute, according to their capability, to the processes of planning, implementing,

<ul style="list-style-type: none"> <li>• the level of involvement expected by them,</li> <li>• the reasons at the basis of it.</li> </ul>	explorative “mode.”	new knowledge.	and then to “submit” this elaboration to others to receive their feedback.	and evaluating learning activities, also sharing part of the teaching actions and of the decision-making processes.
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The teaching planning of the course is organized according to a “gradual” model, in which co-creating represents the "frame" of the entire path, embodying the premise (first lesson) and "getting to the heart" in the second part of the course (lessons 11-20). The three elements of Chi's taxonomy (Active, Constructive, and Interactive) represent the backbone of the first part of the course. In the first lesson, the students are presented with the structure of the course, its objectives, and the level of involvement expected by them, explaining the reasons at the basis of it. During the first lesson, it is also specified that the students will be involved in decisions concerning the course (such as the methods to manage the groups, the conduct of certain activities, the evaluation phase) and the ways in which these decision-making processes will take place.

In the second lesson, an activity inspired by an "active" process is proposed: the aim is to define the different elements that compose the concept of "teaching" and become aware of its complexity. In this activity, starting from the presentation of different definitions of “teaching” (consistent with each other but highlighting different aspects), the teacher explains how to analyze these definitions, creating a scheme that tracks the different elements and connects them, and then the students are asked to individually read the definitions and identify (underlining) the core elements of each definition. This activity can be defined “active” because the students are required to "do something", acting on the knowledge that they are called to acquire through an explorative “mode.”

From the third to the fifth lessons, the students are offered several activities related to "creative" processes: for example, they are asked to watch some movie clips representing school contexts and try to identify if the viewed scene portrays a teaching activity that can be labelled as "teacher-oriented" or "student-oriented". Then the students are asked to start from the ones that they have identified as "teacher-oriented" to imagine how the embodied activities could be modified (with the same objectives and context) to make them "student-oriented". This activity can be defined “constructive” because the students are asked to start from “the known” to create an original

elaboration, developing new knowledge starting from the “achieved” one through a process of interpretation /creation.

From the sixth to the tenth lessons, the students are offered several activities related to "interactive" processes. For example, the students are divided into small groups (3 or 4 students) and each group receives the description of a context (a classroom) and the learning goals that the classroom must achieve referring to a specific topic. The group should estimate what kind of teaching strategies (that have been investigated during the previous lessons) is more consistent with the classroom characteristics and with the learning goals, and then design a lesson plan according to its evaluation. Then, each group presents its own work to the other students and receives from them feedback useful to optimize the project, through a peer review system. This activity can be defined “interactive” because the students are asked to “collaboratively work” to create an original elaboration, interweaving more contributions, and then “submit” this elaboration to the others to receive their feedback gaining from them an opportunity to improve their skills and acquiring of knowledge.

In the second part of the course (from the lesson eleventh to the twentieth), co-creating comes to life: the students are divided into groups, and each group "draws" a specific didactic strategy that will not be presented in the classroom. The group must then perform a literature analysis to investigate the specificities of this strategy and create an educational design that implements it, starting from specific learning objectives. Therefore, during the course, the students also learn how to conduct a literature review and how to design an educational activity. Finally, each group, based on a jointly “arranged” calendar, is called to lead a short lesson to explain to the classmates the studied strategy and to concretely implement their intervention, involving the classmates belonging to the other groups. At the end of the presentation and the intervention, the group receives feedback from peers and the teacher, with the aim to collect useful ideas to optimize their project. At the end of the course, in fact, each group presents a paper containing both the analysis of the literature review and the didactic planning: these papers are part of the final evaluation of each student and are evaluated based on a shared and co-constructed framework between the teacher and the students. This structure is inspired by co-creating learning and teaching because it is based on reciprocity, and the different actors contribute, according to their capability, to the processes of planning, implementing, and evaluating learning activities, also sharing part of the teaching actions and of the decision-making processes.

## **And what about assessment?**

### ***Towards student's agency in assessment***

If we adopt the constructive alignment model (Biggs, 2003) for the instructional design, the orientative framework that guides the choice of the teaching strategies should be considered for the assessment strategies as well. Just like in the 1990s, when there was a gradual shift from teacher to student-centred learning (Biggs, 1999), starting from the second decade of the 2000s it is possible to identify a similar change in the international literature relating to assessment and evaluation, that has led to re-reading also the feedback practices from the student's point of view (Winstone, Boud, Dawson & Heron, 2022). The learning function of assessment is enhanced by the Assessment as Learning framework, which is indeed defined as “*assessment that necessarily generates learning opportunities for students through their active engagement in seeking, interrelating, and using evidence*” (Yan & Boud, 2022, p. 13). The learning promotion could be sustained by the teachers through the students' engagement in the formulation of judgments about their performances and in activities associated with it (for example, interpreting the evaluation criteria, seeking, and using feedback, etc.). However, to develop a true learning for the students, it is essential to associate the moment of assessment with the activation of reflective processes aimed at developing the students' metacognition and self-regulation. Since these activities require a dedicated time (Winstone & Winstone, 2022), it is necessary that the assessment becomes an integral part of the curricular activities and not an appendix just for the sake of it (Boud & Molloy, 2013). This shift from passive to active assessment also shifts the attention from assessment and evaluation to feedback. As stressed by Winstone & Boud (2022), if the first generally performs a certification function, the second aims to support the students in optimising and empowering cognitive and metacognitive processes to gain learning objectives. This approach is further strengthened if we consider the feedback not only as information (Hattie & Timperley, 2007), but as a process “*where the learner makes sense of performance-relevant information to promote their learning*” (Henderson, Molloy, Ajjawi, & Boud, 2019, p. 268). The common ‘feedback as telling’ approach – deriving from the cognitivist perspective and consisting of in just providing the students with information about strengths and weaknesses (Boud & Molloy 2013) – should be overcome because it could be difficult for the students to decode implicit information within one-way statements, and this may result in key messages which remain invisible (Sadler, 2010). On the contrary,

when the teachers and the students work with a socio-constructivist approach, feedback is not only an opportunity to begin a dialogue but also to acquire new knowledge and skills. But, for this goal to be attainable, the focus must shift to the student's agency, that means to their capacity to act intentionally and autonomously towards a specific purpose, and not only in response to the solicitations of others (Nieminen et al. 2022). From this point of view, to be effective, feedback can be considered a practice, which must be exercised as a partnership (Winstone & Carless, 2019).

### *Students and teachers as partners*

Many current assessment practices contribute to the perpetration of certain forms of dependency for which the students take part in certain activities aimed at achieving a learning goal and teachers determine their progression. As proposed by Bain (2010), it should instead be appropriate to propose assessment models that support the students' autonomy, giving them the opportunity to critically reflect on their own performance by formulating and explicitly sharing their own evaluative judgments, thus assuming responsibility for them. It is important to provide such opportunities because only by involving the students in decisions that directly affect them - and the evaluation of learning is certainly one of them - it is possible to recognize their presence and voice. This approach allows the embodying of democratic values also in assessment practices, frequently characterized by a power imbalance (Cook-Sather, 2006). However, feedback can be aligned with the Student as Partner perspective if two requirements are fulfilled: the students and the teachers must share a culture of feedback conceived as a dialogic practice, and their relationship must be characterized by mutual trust (Matthews et al. 2021). Since emotions are an intrinsic part of feedback processes and of the development of skills within the emotional regulation process, the development of educational alliances could have a considerable influence in terms of the impact of feedback practices, because they are considered as a co-construction process in the context of a safe and mutually respectful relationship to support growth (Ajjawi & Regehr, 2018). These behaviours are feasible only if we create learning environments where the students can feel safe and supported. It is therefore possible to understand how the relational dimension plays a central role in the feedback processes. Indeed, the interpretations are first developed individually and then shared by the students and the teachers through interaction, which is inevitably influenced by the relational dynamics between the participants (Price, Handley, and Millar, 2011) who collaborate in a community of learning and practice (Evans, 2013). To effectively develop feedback practices, further

clarification should also be provided. Feedback skills are not innate, neither in the teachers, nor in the students. Since feedback skills are not innate, neither in the teachers nor in the students, it is necessary to activate and intertwine the teachers and the students feedback literacy practices in advance (Carless & Winstone, 2020). While the first is aimed at empowering teachers' "*knowledge, expertise and dispositions to design feedback processes in ways which enable student uptake of feedback and seed the development of student feedback literacy*" (Carless & Winstone, 2020, p. 4), the second should be proposed to support the students' acquisition of those "*understandings, capacities and dispositions needed to make sense of information and use it to enhance work or learning strategies*" (Carless & Boud, 2018, p. 1316).

### ***Thinking and practicing assessment actively***

Recalling what has been previously said concerning active learning – where the students are asked to assume an agentic posture putting knowledge into practice – active assessment encompasses the students to uptake teachers' feedback. But the feedback uptake is a complex matter because, as suggested by Nicol (2013), even with high quality teacher feedback, they could be ineffective. This is for several reasons. First, the students may ignore comments, reject them, or find them irrelevant. Second, the students may read the comments but not decode them as intended by the teacher because they are written in a speech with which the students are unfamiliar, or they are filtered and distorted by pre-existing beliefs and misconceptions. Third, the students may successfully interpret the feedback message as intended, but still have difficulty in linking and evaluating it in relation to the task. Finally, even if they achieve all the above, the students may not review their networks of knowledge, or they may not be able to transfer their learning into new contexts. Feedback uptake is a complex process. It firstly includes feedback appreciation, that means to develop a shared understanding of the feedback role in empowering learning processes and output, but especially to understand the meaning of the information, which lie inside the feedback. To be implemented, feedback must be internalized by the students through an evaluative judgment, namely through the "*the capability to make decisions about the quality of work of self and others*" (Tai et al., 2018, p. 471). Evaluative judgment is made up of two constitutive elements, which operate as complementary to each other: firstly, it implies understanding what constitutes quality; secondly, it implies to apply this understanding through an assessment of the task. Such interpretation can lead the students to re-interpret the task or to change their learning strategies

(Nicol, 2018) through the activation of self-regulation of learning (Nicol and Macfarlane-Dick, 2006). In addition to cognitive processes, as we have already said, it is also necessary to pay attention to the emotional dimension of the assessment by helping the students to recognise and exploit positively emotions. For example, Pekrun's control-value theories (2006) highlight how emotions are not only characterized by a positive or negative valence, but also by a different activation potential. Although positive emotions are generally related to learning effectiveness, there are positive emotions (such as relief) that deactivate the cognitive processes because they do not promote any action. On the contrary, negative emotions such as shame and anxiety are activating ones (Pekrun, et al., 2007; Pekrun, Elliot e Maier, 2006). These three elements – appreciating feedback, making judgment, managing affect – concur in taking action (fig. 1).

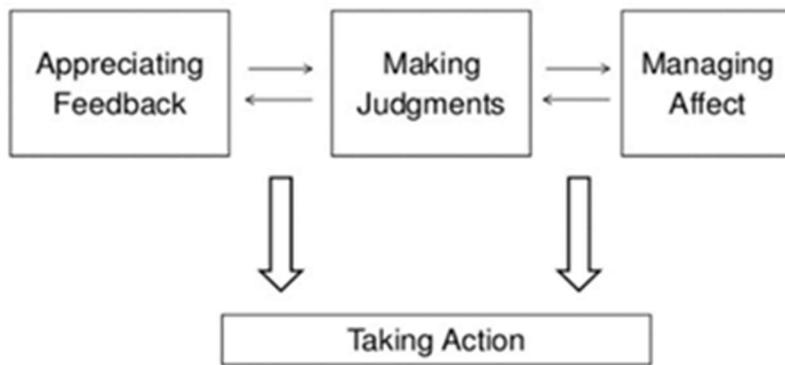


Figure 1. Student feedback literacy.

A huge amount of literature has been written about the feedback given by the teachers. An interesting and innovative assessment technique that can motivate the students in the feedback uptake is the authentic feedback, which is defined by Dawson, Carless & Lee (2021, p. 287) as a “*feedback process that resembles the feedback practices of the discipline, profession or workplace*”. It can be used, for example in the university environment, to promote the development of professional skills as well as an effective transfer from higher education to the world of work. For this purpose, feedback can be formulated – both within degree courses and internships – by professionals employed in working contexts. The teachers who would like to include authentic feedback into their teaching and learning paths, must consider the five dimensions that characterise authentic feedback: a) realism, that means to engage in the tasks and report the social and physical contexts

of feedback in the discipline or profession; b) cognitive challenge, that means to engage learners in higher-order thinking through feedback; c) evaluative judgement, that means that the students are asked to assess the quality of their own work and the work of others; d) affective challenge, that means that the students regulate and make a productive use of their emotions; e) enactment of feedback, that means that the learners respond to feedback as a professional would do in the discipline or profession (Dawson, Carless & Lee, 2021).

### ***Approaching feedback constructively***

According to Chi (2009), the students who are working within the constructivist framework of learning should elaborate new knowledge (an organically structured original elaboration) starting from the information they already have. If we consider assessment strategies, this description could make the reader think about what has been argued in the previous paragraph regarding feedback uptake, especially if it is inserted in the framework of the AaL (i.e., feedback as an active approach to learning through assessment). The clarifications proposed by Chi (2009) help to unravel this possible ambiguity: the constructive processes do not imply a manipulation of existing information, but the creation of original products, with new meanings.

One example of constructive feedback could be self-feedback, which is defined by Panadero, Lipnevich and Broadbent (2019, p. 148) “*as the implementation of self-assessment in ways that generate feedback information and processes for students’ own purposes (e.g., achieving educational gains)*”. The construction of new knowledge appears more evident if we consider the general phases through which the students elaborate self-feedback (Panadero, Lipnevich and Broadbent (Idem, p. 149):

- (1) determining the performance criteria;
- (2) self-directed feedback seeking that can come via inquiry from external sources or self-monitoring;
- (3) self-reflection based on the feedback sought.

To understand where new knowledge lies, we can paraphrase Nicol, who explains that this process allows the students to elaborate, starting from external resources, an internal feedback, which is “*the new knowledge that students generate when they compare their current knowledge and competence against some reference information*” (Nicol, 2021, p. 757). Therefore, for the students it is not only a matter of adopting an agentic posture, but first, to identify those elements of knowledge that allow them to build external feedback; secondly, to use these elements to formulate the

internal feedback thus acquiring new awareness not only concerning the task, but also the cognitive processes activated for its elaboration.

### ***Interactive ways to elaborate feedback***

With the interactive approach, learning processes further increase in complexity because the relational and dialogical dimension is added to the active and constructive dimensions. An example of possible feedback activities characterized by the interactive dimension has already been anticipated and concerns the possibility to include peer feedback activities in the instructional design. Also, in this case many papers explore the use and impact of this technique from both a theoretical and empirical point of view. To enhance the interactive dimension, feedback should be conceptualized “*as a dialogical and contingent two-way process that involves coordinated teacher–student and peer-to-peer interaction as well as active learner engagement*” (Nicol, 2010, p. 503) in relation to the quality of the students' work; feedback is the 'place' where interpretations are shared, meanings negotiated and expectations clarified (Carless et al., 2011). Dialogue reduces the students' difficulties in understanding and appreciating feedback because it allows to explicit and share personal interpretations (Winstone & Carless, 2019). It is therefore important to reflect on the possible methodological choices that a teacher can make in the assessment design phase. For example, feedback could be blind/anonymous or transparent; it could be oral or written. There is obviously no better choice than other because the instructional and the assessment design must always be contextualized in relation to the learning objectives and the students, but, if we want to promote interactivity, it is preferable to opt for oral and transparent feedback to facilitate the activation of clarifying dialogues among the students.

A second tool, whose learning effectiveness is based on the interactive dimension of feedback, is the interactive cover sheet (Bloxham & Campbell, 2010). This tool is very interesting in terms of balancing responsibilities as it moves the learner from a passive role in the feedback process to an active role because its specific objective consists in promoting feedback seeking posture and behaviours. As described by the authors (2010, p. 4):

These sheets, similar to a typical sheet attached to the front of a student's assignment, included identifying information on the student, the module and the assignment as well as space for tutors to write feedback. The unique feature of the interactive cover sheet is the additional section where students are asked, on submission of their assignments, to identify particular aspects of their work on which they would like feedback. The tutors completed their marking by writing feedback aimed directly at answering the students'

queries about their work.

### *Toward a co-creative feedback*

The application of the co-creating teaching and learning approach to assessment implies that the teachers and the students can work together in the processes of planning and implementing feedback activities, thus sharing the decision-making processes that are at the basis of these actions. As mentioned by Morton et al (2021), the idea of negotiating assessment is not new: experiences of co-assessment, participatory assessment and assessment co-design have already been used in higher education to engage the students in collaborative assessment processes. One technique that can be traced back to this approach is the co-construction of feedback tool, for example the (self)assessment rubric.

The proposal addressed to the students to actively participate in the construction of the rubrics, rather than receiving and using them to carry out the task, arises from the multiplicity of gains that derive from this process. The students can become more focused as they take part in identifying and defining the criteria used to judge their work; they can better understand what and how standards, expectations, and criteria are set; they can have clarity of the different levels of their performance, leading to improvement in the overall task quality. This process allows them to become more independent even in the assessment phase, as well as to gain ownership over the learning and assessment process (Ghaffar, Khairallah & Salloum, 2020). We can draw from the literature some suggestions for a more effective use of this tool. The students must not be left to fend for themselves in the elaboration of the rubric. It is indeed important for the teachers to provide guides and protocols to support the co-construction process (Kilgour et al., 2020). Furthermore, the potential of participating in the co-creation of the assessment rubric decreases if the process stops once the final product is realized. On the contrary, it can be used by the students to carry out the activity in relation to which it was created. The list presented below (Kilgour et al., 2020, pp. 8-9) is an example of the multiple levels of the use of a co-created rubric.

- (1) Selecting a course that was appropriate to rubric co-construction;
- (2) Gathering appropriate rubric examples as exemplars for the teachers and the students;
- (3) Organising meetings with the teacher and the students and setting timeframes;
- (4) Establishing clear protocols in rubric co-construction meetings, agreed upon by the students and the teacher;
- (5) Using clear rubric co-construction instructions in protocol documents;

- (6) Understanding the assessment task and how it is assessed by using the co-constructed rubric;
- (7) Linking the co-constructed rubric to the assessment task, learning outcomes and other accreditation standards (for example, the Australian Qualifications Framework);
- (8) Creating, editing, and finalising the co-constructed rubric before it is used by the teachers and the students.

### **Conclusion**

Our starting point was the idea that the union between Chi's taxonomy and co-creating approach can represent a way to maximize the effectiveness of active learning, thus reducing its impediments (with a specific attention to resistance to change). Then we have presented one of the possibilities to organize the lesson plans to connect these two approaches. The two "key elements" that allow making this connection effective are the focus on the students' increased responsibility and the emphasis on the reciprocity between the different "actors" involved in the learning processes to make them able to contribute (even if in a different way) to the teaching/learning actions, also sharing the decision-making processes. Moreover, the ordering principle that must be "used" to structure the lessons plan is graduality.

These aspects are essential to allow the transition from a "theoretical" position to the practical implementation of this model, however, they do not only concern the "conducting" part of the teaching actions, but also the evaluation actions. Indeed, we cannot have an "active" teaching tool and a "passive" evaluation: therefore, if we design the teaching action adopting this "integrated" model, we must use the same "lines" to design the evaluation phase as well. Moreover, if for the project dimension it can in a certain sense rest on more "consolidated" application bases, the "translation" of this model on evaluation actions is even more delicate because there are still very few previous experiences of "student-oriented" evaluation. In fact, it is still difficult to think about these practices by focusing them on the students' true agency. The key to achieve effectively this "conjunction" in the evaluation phase is feedback. Indeed, to "reach" an assessment starting from this model, the teachers and the students should work together to plan and implement feedback activities, sharing the decision-making processes that are at the basis of these actions, negotiating the "meaning" that is at the basis of this "co-assessment" through the co-construction of feedback tools.

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# **On inclusive teaching strategies in the context of potentially conflict talk: ‘Encouraging to connect topics to personal experience’ in diverse primary classrooms**

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## **Abstract**

Although potentially conflict talk on public issues is frequently advocated in academic communities, it can be very challenging for both teachers and learners, which is why it tends to be rare in classrooms, especially in those with diverse and/or marginalised students in primary schools. Though such talks inevitably take place in the context of diverse, fluctuating social identities, and unequal social power relations within the classroom, there is little research on how such conversations are conducted considering the minority viewpoints. This article therefore focuses on these aspects and provides a reflection on the teaching strategies applied by teachers of diverse student groups in primary schools and contributes to the discussion on inclusive approaches to teaching and learning for an inclusive, interconnected world. It focuses on one specific teaching strategy termed by the author ‘encouraging to connect topics to personal experience’ and illustrates the different ways teachers try to enable a vital dialogue among all students, exposing the emotional complexities encountered by teachers and students when dealing with conflicting narratives. It shows how the teachers’ intent to create an inclusive climate of democratic dialogue can be a messy practice, ending up generating strong emotions, marginalizing diverse students, and reinforcing the diverse students’ invisibility. This contribution therefore raises further questions on how to deal with heterogeneous and silent voices in classroom and what professionalization in this context means. The reflections are based on empirical data obtained through a literature review along with some interview-based data generated in the Swiss primary school context.

Keywords: inclusive teaching, conflict talk, diverse classroom

### **Introduction: ‘Encouraging to connect topics to personal experience’ as teaching strategy in potentially conflict talks**

According to Helsper (2018), appropriate crisis initiation and crisis resolution (Oevermann, 1996; 2002) are part of professional teacher action. In this context, teacher action must not only offer supportive crisis solutions in the process of dealing with the acquisition of subject-specific knowledge, the understanding of new perspectives, and the readjustment of the relation to oneself and the world. It must also challenge the already unfolded interpretations of the self and the world and thus trigger crises of knowledge that can function as sites of emergence of new knowledge (Combed & Gebhardt, 2007; 2012). Discussions about potentially conflicting topics like migration, gender or covid in classrooms might provide opportunities for such readjustments to take place. In fact, a large body of international research reports that students who participated in thoughtful discussion of sensitive issues in inclusive classroom environment, tend to exhibit understanding of core democratic values, openness to alternative points of view, and critical thinking skills (Haas, 2008; Hahn, 1998; Hess & Posselt, 2002; Torney-Purta, Lehmann, Oswald, & Schultz, 2001).

However, potentially conflict talk on public issues can be challenging for both teachers and learners, which is why it tends to be rare in primary school classrooms, especially in those with diverse and/or marginalised students (Hess & Avery, 2008). For instance, Dull and Murrow (2008), based on their observations of twenty-six urban, suburban, and rural school classrooms, report that the teachers were more likely to use closed-ended questioning patterns that encouraged short-answers and recitation of information rather than open-ended questions that could have stimulated broader discussion. They furthermore found that silencing or ignoring conflicting perspectives did happen and were more noticeable in ethnically heterogeneous and lower socio-economic status classrooms. Fear of community backlash (Ho, Alviar-Martin, & Leviste, 2014), insecurities about academic freedom (Misco & Patterson, 2007), or fear of jeopardizing relationships with students through such discussions (Engebretson, 2017) are some of the reasons for the teachers’ reluctance. Furthermore, the sense of their own expertise in pedagogy and curriculum content as well as their positionality regarding political or ethnic conflicts influence if and how they conduct such talks (Bekerman, Zembylas, & McGlynn, 2009; Oulton, Day, Dillon, & Grace, 2004). For the low-status students, on the other hand, to be involved in potential conflict talks might bear a bigger risk. Children often aspire to be part of the dominant group and the school community which is why it might happen that they try to distance themselves from their milieu of origin and

keep silent, when identity related discussions emerge, as *scene one* in this article illustrates.

Though such talks inevitably take place in the context of diverse, fluctuating social identities and unequal social power relations within the classroom, there is little research on how such conversations are conducted considering the minority viewpoints. This paper therefore provides a reflection on one specific teaching strategy applied by teachers of diverse student groups in primary schools when discussing potentially conflict issues. The term *teaching strategy* here refers to the question of how teachers facilitate dialogue in the diverse classrooms. To answer this question, I will rely on the literature review studies. Most of these studies, which follow diverse theoretical traditions, such as peacebuilding education, culturally responsive/relevant pedagogy, critical pedagogy, philosophy for children, critical race theory, critical literacy, emphasize the aim to give diverse voices space to speak and be heard when talking about sensitive issues and underline the importance of relating to the specific lifeworld of the students. In fact, by analyzing these studies it became evident that many teachers applied the teaching strategy I termed ‘encouraging to connect topics to personal experience,’ which refers to the practice to invite students to connect the curriculum to their personal experiences and knowledge when discussing potentially sensitive topics. In this paper I will analyze the potential of this strategy to involve the different students and to enable the acquisition of new knowledge, the questioning of assumed knowledge or the repositioning of oneself in the world in terms of Helsper.

The following three teaching ‘scenes’ from the US classroom context will be presented to discuss to what extent the strategy of ‘encouraging to connect topics to personal experience’ enables or impedes new learning opportunities. In a second step, the role of emotions when discussing sensitive issues will be reflected on as well as the question of how emotions may shape the learning opportunities of the students by referring to one example of data generated in the Swiss classroom context.

Table 1: References from the literature review

Scene	Title	Author
Scene 1	Fostering Critical Dialogue Across Cultural Differences: A Study of Immigrant Teachers' Interventions in Diverse Schools	Subedi (2008)
Scene 2	Fostering Critical Dialogue Across Cultural	Subedi (2009)

	Differences: A Study of Immigrant Teachers' Interventions in Diverse Schools	
Scene 3	Connecting, Resisting and Searching for Saver Places: Students Respond to Mildred Taylor's The Friendship	Möller & Allen (2000)

### Three scenes of potential conflict talks

#### *Scene 1: Explicitly encourage students to connect topics to personal experience by emphasising their 'Otherness'*

Anita, a fourth-grade teacher of Asian-Indian descent, was teaching in a US school, where 70% of the students were White and most of them from middle-class families. The other students were African American and Asian immigrants. The teacher incorporated discussions on cultural difference while talking about current events explored in the articles chosen by the students. Lubna, a student of Asian Indian ancestry, brought in an article on the impact of the monsoon rain in villages across India and shared a picture of a flood toppling houses. Immediately, a student asked Lubna, if all houses in India looked like hats, which caused a giggling in the classroom. This made her explain that she was not sure, despite having been born in that country, about how people lived in different parts of India. Lubna has lived most of her life in the United States, she was fluent in English and wore a headscarf. In that moment, Lubna looked to Anita for help. Anita found the humor associated with the flood particularly troubling and asked the students – to foster critical thinking – to write on and discuss the reasons for living in different kinds of houses and to explain how the financial condition affects the type of housing. Anita knew well that immigrant students such as Lubna did not equally inhabit the same public spaces as the others. Therefore, she often intentionally intervened to validate or to contextualize the diverse students' perspectives. With the best intention, Anita, in the context of the discussion on housing, encouraged Lubna to connect the topic to her personal experience by asking her to speak about India. Lubna, however, showed no interest in participating in the discussion, she was silent and reluctant to speak, distancing herself from the conversation. Anita associated Lubna's silence with peer pressure and pointed out in the interview that Lubna usually

refused to participate when it came to discussions on Islam and immigrant communities in the United States. (Subedi, 2008, pp. 427-430)

***Scene 2: By speaking generally, leave room for connecting topics to personal experiences voluntary***

Scene 2 took place in the same class with the same teacher. It was about Lee, a student who migrated with his parents from Korea to the United States almost a year ago, and who had limited English skills. Lee had a low status in the class and his interaction with his peers was rarely constructive. During class discussions Lee was mostly silent, and it was on the playground during recess that he tried to connect to other students. Once, when he expressed the wish to play basketball with them, he got the answer: 'Go back to where you came from.' Another student threw the ball at Lee, shouting, 'You play by yourself now!' The ball hit Lee on the back. Anita, who had observed the incident, quickly walked towards Lee, and inquired about the details of the incident. For Anita, the phrase 'Go back to where you came from' was to be understood within social discourses of racism and xenophobia, marking the student as the 'Other.' But this time, based on the experience with Lubna, the teacher decided to proceed differently. After the recess, she did not immediately address the incident she had observed but read aloud to the class from a book, which addressed the topic of discrimination faced by Japanese children in the American society. Learning from Lubna's lack of participation, she decided not to focus on the particularities of Korean experiences in the United States but to talk more generally about the need to value differences and to respect others. She then asked the students to write personal responses to questions regarding name calling and community building. The following discussion was characterised by silence, since no students were willing to contribute to the question of what name calling meant and why Lee had been isolated and harassed. By referring to what happened to Lee on the playground and by relating it to their thoughts expressed in their assignment, the students decided to develop codes of conduct on how to treat their peers. Anita's way of intervening during the discussion was based on her observations of Lee's reactions. Lee followed the discussion attentively and when Anita described the grave effects of bullying, he nodded expressing his agreement. When the discussion was about respecting each other, he engaged actively by commenting on it and by connecting the topic to personal experience. He stated that his family had been living in the neighborhood for more than a year and claimed respect. Anita explained in an interview, 'I wanted to closely observe how he would

respond and then proceed based on his reactions so that he was not isolated further' (Subedi, 2008, p. 433).

### ***Scene 3: Personal experiences and emotions***

Scene 3 took place in a reading circle context, in a little US town. The reading group consisted of four fifth-grade girls, three African American and one Hispanic, all struggling readers. Such children are rarely exposed to complex text, where personal and social connections are explored, but are expected to merely engage in the decoding or factual comprehension of the content (Dudley Marling & Fine, 1997; Dugan, 1997). The reading circle was guided by Karla Möller, a European American who was part of a collaborative research group. The book discussion on *The Friendship* (Taylor, 1987) was conducted for 25 to 75 minutes outside the classroom over 5 days of a period of two weeks. Karla chose a short book which was about racial discrimination in the 1930's in the United States and which had an African American female protagonist about the same age as the girls. Karla's book choice assumed that the girls would identify themselves with the main character, which would encourage them to engage in dialogue. Karla's difficult task was to encourage student-led book discussion while guiding the students' learning within a limited time frame.

At the beginning the girls primarily focused on reading the playbill, trying to clarify factual aspects, which took several days. Though facing comprehension problems, the girls engaged in an animated discussion and were very keen to read more. When it came to a discriminatory treatment of the Black protagonist, the girls started to express outrage and identification and engaged in discussing what friendship in the times of racial segregation could have meant. Based on their comments, Karla suggested discussing the historical background of the book and made connections to the present time by asking if slavery still existed. After this phase, the girls moved to another level of interpretation, understanding racism as a major theme. One girl then brought the issue of racial discomfort into the present by connecting the topic to personal experiences: 'That's how I feel when I go to a White church.... I feel weird' (Möller & Allen, 200, p. 17). It was this connection to real personal experiences that led to an explosion of emotions, to connecting the book to themselves, to their own life as children of color. Suddenly, a student made an extratextual association with the Ku Klux Klan, and the other girls immediately started asking questions and sharing their thoughts about and experiences with the Klan. They became very emotional once again, expressing their fear and one student refused to continue talking about it. This was the point where the girls stopped being mere observers and

interpreters of the story; they turned into the very actors of a racial oppression drama: young students of color who feared the Klan. Despite this stated emotional discomfort, the girls did not abandon the conversation, but tried to create safer places for themselves by calling on authorities, their parents or Karla, expressing their hope to be protected by adults. Though Karla confirmed that racist assaults were against the law, she and the students were painfully aware that when it is about such violence no safe place can be guaranteed. When Karla tried to redirect their attention to the concrete content of the book, one girl refused again to continue reading and talking about the topic and suggested another book, which dealt with slavery in a less emotional way.

Also, Karla became increasingly concerned about the intensity of the girls' responses to the discussion and she worried about broader repercussions arising from her choice of this text. She realized she could not provide the protection the young women were looking for, though she desperately wished she could. It was about finding a balance between offering comfort while not denying the uncomfortable realities of the world. She encouraged the girls to talk with their parents about the topics raised and to read the assigned sections with them. By inviting the students to write down their thoughts and emotions, she offered the girls a way to disengage from the conversation briefly while continuing to engage with the topic. One student again countered by asking to get another book, and another girl said she was tired of writing. They were about to leave the reading circle, but they did not. They wrote. (Möller & Allen, 2000, pp. 145-186)

### **Conclusion and further thoughts on emotions**

As the three scenes expose, the teachers' strategy to encourage to connect topics to personal experience when discussing sensitive identity-linked topics may generate different intended and unintended outcomes. In scene 1 and 2 we are dealing with an immigrant teacher who has herself been exposed to discriminatory experiences and who is aware of the social position students as Lubna and Lee inhabit. She makes significant efforts to counteract such exclusionary processes which arise in the class and had the best intentions when it was about to get Lubna and Lee out of the unfavorable situations, which exposed their 'Otherness' in the classroom. For sure we can say that by giving the students the task of critically exploring the topic, she enabled learning opportunities for the class by fostering dialogue that challenges stereotypical and biased perspectives. She did not address or blame the students who ridiculed Lubna and excluded Lee but gave the whole class the opportunity to reconsider the incident and the students'

position. But what about Lubna and Lee? How does it come, that Anita's two students react so differently? The different responses provided by Lee and Lubna must be interpreted in the context of Anita's different strategies applied in the two incidents. By inviting Lubna to talk about India, Anita encourages the student to connect the content to personal experience, to make a marginalised student visible. Lubna becomes the focal point of the discussion and was expected to speak as an expert on a topic she not only had limited knowledge about, but which also was likely to expose her as the 'cultural Other,' the Asian girl. However, Lubna, though in general feeling validated by the teacher, is not responsive to Anita's invitation, and her intent caused further withdrawal and marginalization, making Lubna even more invisible. In this case, the strategy to encourage to connect topics to personal experience did not provide the opportunity to acquire new knowledge and to readjust the relation to oneself and the world but did reinforce the student's low-status positionality. Lubna's withdrawal raises questions on the strategies teachers apply in discussions when it is about the students' ascribed differences. Such a withdrawal is especially likely when low-status students face the risk of being ignored or ridiculed by their peers.

In Lee's case Anita approaches the topic of bullying and discriminatory comments in a more general way, addressing the whole class rather than focusing on Lee and the specific incident during the recess. Lee was not encouraged to share personal experiences regarding his assumed cultural identity, which gave him the opportunity to choose whether to voice his opinion or not. This opportunity he has seized once in the discussion, feeling safe enough no expose himself with his personal history. By *voluntarily* speaking to the class about his experiences of being an immigrant in the US, he turned his invisibility into an intentional though temporary visibility, experiencing himself as having voice and being someone meaningful. In sum, the talk on a sensitive identity-linked topic enabled by the teacher, allowed Lee for a moment to experience himself differently in relation to himself and the world.

In the last scene with the small reading circle, we learn how subtly the teacher encourages to connect topics to personal experiences by choosing a book with a protagonist she assumes the young students might identify with. The students indeed follow this invitation, and the subsequent reading process exposes how allowing personal experiences to emerge may generate strong emotions, which might present a challenge both for students and teachers. The teacher's teaching strategy in this scene is to include the students' emotions and to work on them. For sure, in this case the teachers enable the acquisition of the new knowledge and the questioning of the old one as well as a readjustment of the relation to oneself and others. However,

the strong emotions which accompanied this crisis raise questions on how to prepare the teachers for this situation.

In fact, since the political and ideological world is highly emotional and the discussion on potentially conflict topics may threaten the involved students' identification, it is significant to consider emotions. Various scholars have emphasised that the rationale approach is often irrelevant (Journell, 2016), to simply refer to evidence and 'trying to battle facts with more facts', (Garrett, Segall, & Crocco, 2020, p. 315) may have little effect without addressing the social emotional aspects (Håkansson & Östman, 2018). This results in a sort of compromise for teachers: on the one hand, if they want to enable learning opportunities for the students, their emotions and perspectives are to be taken seriously, on the other hand, we know that intense emotions foster simplistic information processing and limit students' willingness to change perspective (Wansink et al., 2019).

However, it is important not to forget, that not only the students' participation is guided by emotions when discussing sensitive issues, but that also the teachers' actions are influenced by their emotions. There is little data on this topic. In Switzerland we have conducted interviews with young teachers, talking with them about their experiences of discussing sensitive identity-linked issues with the students<sup>1</sup>. Ms. Ruf, for example, is a 27-year-old teacher who has many students whose parents migrated to Switzerland and who is teaching in a village with many right-wing voters. She told us about a conflict between students who called each other 'shitty foreigner' and 'shitty Swiss' on the playground. Ms. Ruf is a very calm and reflective teacher, and she has been very engaged with the topic of racism. But when this scene between the students came up, she could not react the way she wanted to: 'I always want to talk to the children first and ask why, but especially in such situations, I rush right in and say: "Hey, that's not possible, I don't want to hear that (..)"'. She continued explaining:

Emotionally I get angry. I try not to show it to the children if possible; I let them feel that this behavior is so inappropriate that I am above discussing it. I wouldn't exactly say it like that, but they know I would never accept it and that I find it unnecessary to behave so stupidly because of someone's

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<sup>1</sup> There is no empirical data on the question of how to deal with potentially conflict topics in the classroom in the Swiss school context. When it comes to practical recommendations regarding how teachers might deal with such topics and situation, C. Mantel's et al. (2019) book "Auf den zweiten Blick" gives an inspiring insight into constructive practices.

belonging. So, it bothers me emotionally because I find: No, that's not okay at all. (D. Ruf, interview, October 8, 2021)

The teacher perceived such situations as difficult and ambivalent:

That's so difficult, you can't change someone's mind, but I would like to. I would like to make the children – in this case – a little more open and empathetic (..) and afterward I feel like powerless and think that I can't fulfill my task...the opinion of the children... I don't want to just change them, but I want to open their eyes that they could change their opinion if they wanted to, but it's such a difficult task. (ibid.)

The strong emotions caused by the teacher's refusal of discriminatory actions and her strong desire to transform the student's opinion, led to an immediate, strong, and normative intervention which silenced further dialogue. After this incident, the topic did not come up again and the teacher admitted, that she could not say if the students were self-silencing as reaction to the teacher's strong personal positioning or if they had found a constructive way to deal with it. At this point the question emerges if there are other, more dialogue-opening strategies which enable learning opportunities also in this case:

It is insufficient to change students' mistaken views simply by criticizing them as wrong or illegitimate or simply by giving counterresponses to unaccepted perceptions. Rather, changing such attitudes and beliefs requires following the process and rationales by which they were formed in the first place, and that requires having some patience with hearing out views—up to a point, at least—that one might find deeply objectionable. . . . When these views are regarded as something solely to be silenced, or condemned, or held up as an object lesson for the sake of others' educational benefit, something of potential value, educationally, has been sacrificed. (Burbules, 2004, p. xxviii)

The three scenes have illustrated that the strategy to encourage to connect topics to personal experience might lead to a strong emotional involvement of both teachers and learners. To transform such sensitive incidents into a real learning opportunity for the students, teachers who operate as crisis initiators need to acquire a professional ability to manage emerging emotions. Such a professional handling allows the teacher to approach the learners' perspectives and to accompany a process, which in the best case leads to the emergence of a new cognitive and emotional order for the students. This implies the teachers' willingness to 'decentralize' (Helsper, 2018, p.130) their own perspective by temporarily distancing oneself from the own interpretations of self and the world. If this is not the case, vulnerabilities might be reproduced rather than reduced, as it happened in Lubna's case.

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## **Second strand**

**Preparing teacher educators (TE) and  
TE stakeholders to model and  
facilitate Global Competence  
Education (GCE)**



# **Gifted Identification at school. A simulation of a training path for Italian teachers**

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## **Abstract**

Teachers play a fundamental role in the identification process of gifted students. Identification can be guided through specific training and the use of observation instruments to maintain equity and let each child be recognised for his own potential. This study describes a teacher training path developed within the Italian version (SRBCSS, ed. Sorrentino, Pinnelli, 2021) of the Scales for Rating the Behavioural Characteristics of Superior Students (Renzulli et. al. III ed. 2010). The simulation of a training course based on the teacher training exercises presented by Renzulli was developed after using the exercises with forty-seven middle school teachers of the North, Centre, and South of Italy. The simulation points out some critical aspects that a teacher can encounter in the understanding of giftedness and the use of the scales during the training. This integration to the Renzulli Scales led to exploring the key competences required to the training teacher that want to conduct the simulation.

Keywords: giftedness, teachers, teacher trainings, identification, school.

## Introduction

The approach to the topic of giftedness within the Italian classes is a practice that is becoming increasingly popular thanks to the scientific commitment of researchers and dedicated associations that have led the Ministry of Education to take a position on this issue. The Ministry of Education therefore had to issue in 2019 the note no. 562 of 3 April 2019 which proposes some clarifications concerning the mention of pupils with special educational needs.

This note underlines the primary value, within the school community, of the concept of inclusion and authorizes teachers to use the correct practice to personalize the didactic path of pupils in the face of “any critical situations with consequent manifestations of discomfort” (MIUR, 2019, p.3). This is because the literature (Silverman, 1983; Piechowski, 1986) recognizes that among the possible characteristics of the gifted student there is also the specific emotional and relational profile to consider. “The gifted student needs special attention and personalized study plans, which allow him to express himself at his best.” (Sorrentino, Pinnelli, 2021 p.14). The presence of the topic of giftedness within the reflection range of the pedagogy of inclusion is even more important when reflecting about double exceptionality (Foley Nicpon, Allmon, Sieck, & Stinson, 2011), that is, to imply the presence of socio-cultural disadvantage or deficit in specific areas together with high cognitive potential or talent. Otherwise, the risk is that he will disperse his talent in [risky and therefore] problematic behaviours” (ibidem).

Alongside scientific research and appropriate legal support measures, an essential and unavoidable function is the action of identification and recognition by the professional with whom the pupil most frequently interacts in the learning task. Teachers hence play a fundamental role in the identification process of gifted students. That process of identification can be guided through specific training and the use of observation instruments to maintain equity and let each child be recognised for his potential. In the teacher’s toolbox, observation is a powerful method for students’ cognitive investigation, if used correctly without any judgments and guided by specific educational tools. The observation to which we refer is direct and takes place in a natural environment, i.e., the classroom, the corridors, the school garden (understood as physical and relational spaces), in times and places in which the gifted behaviour of the pupils can emerge in all their nuances. The observational competence required of the teacher has an evaluative function, that is, the teacher must be able to grasp the specific characteristics of each pupil and to know in depth their cognitive, emotional, and learning profile.

In this way, they can trace the student's individual profile by grasping the areas to be strengthened and supporting them through a differentiation of the methodological and didactic proposals.

Teachers are not always prepared for this task and in most cases, the evaluation process of the gifted profile generally takes place on the initiative of the family. However, when the school is prepared to work with differences and therefore adopts truly inclusive policies, it is also able to identify highly gifted pupils, especially on the recommendation of special educational needs (SEN) teachers who would seem particularly attentive to recognizing characteristics of giftedness (Sorrentino, Pinnelli, 2021).

Through a qualitative-quantitative survey of a group of SEN teachers, Sorrentino (2017) found it was possible to demonstrate that in the evaluation of creativity SEN teachers tend to attribute higher scores than mainstream teachers in this dimension, and this evaluation correlated more with external tools of creative assessment. According to the study, mainstream teachers tend to adopt an academic gaze when looking at the student's potential, and they assess pupils according to their subject achievements or their behaviour at school, "focusing more on their analytic skills rather than their creative or practical skills. On the other hand, teachers that had training on Special Needs are keener on assessing children on skills that go beyond the academic areas and that are related to divergent thinking." (ivi, p.98).

The sector studies have investigated the tools and opportunities through which the teacher can identify a gifted pupil profile: identification scales, talent portfolio, observation grids, standardised tests, school records. As already pointed out, observation plays a key role and can bring interesting results through a combination of other qualitative data like parents, peers, and self-nomination and/or quantitative data. Among the developed and standardized identification scales (Gilliam & Jerman, 2019; Fabio, 2019; Renzulli et. al. III ed. 2010) a common element that cannot be ignored is the consideration of context variables. When using teacher rating scales, we need to consider that the cultural context, the level of education and gender, affect evaluations of teachers significantly (Elliott & Argulewicz, 1983; Sorrentino, 2017, p.95). For this reason, during the process of the adaptation of the Scales for Rating the Behavioural Characteristics of Superior Students (Renzulli et. al. III ed. 2010) we want to focus on the aspect of teacher training giving teachers some instruments to better understand the scales themselves and the construct of giftedness in all its nuances.

Starting from the operational proposal present within the Renzulli scales, this contribution aims to describe a teacher training path developed within the Italian version of them (SRBCSS, ed. Sorrentino, Pinnelli, 2021). The simulation of a training course based on the teacher training exercises

presented by Renzulli was developed after using the exercises with middle school teachers in the North, Centre, and South of Italy.

### **Structure of the scales**

The original SRBCSS-III (revised edition) consists of a total of fourteen scales aimed to evaluate the following areas: Learning; Creativity; Motivation; Leadership; Artistic Characteristics; Musical Characteristics; Dramatics Characteristics; Communication Characteristics (Precision); Communication Characteristics (Expressiveness); Planning Characteristics; Mathematics Characteristics; Reading Characteristics; Technology Characteristics; and Science Characteristics.

Before using the scales, the assessment protocol indicates the importance of being trained in their use through two specific teacher training exercises. These can help to improve the reliability of teachers' assessments. "It is strongly recommended that teachers complete the training before using the Scales, to train themselves to better place some behavioural indicators in the right scale, to assume a uniform vocabulary and a homogeneous interpretation model" (Sorrentino, Pinnelli, 2021, p.30).

The exercises contained in the Teacher Training facilitate discussions on specific student behaviors. The activity must be moderated by an educator, by an expert teacher in the field of giftedness, or by a teacher specialized in the topics of inclusion, personalization didactics and differentiation.

The purpose of the activities proposed in the exercises is to encourage teachers to interpret some of the student's "sentinel" behaviours, intercepting them in the first instance, knowing how to decode the meaning and training specific observation skills in a school context. These are metacognitive activities that in teaching practice define a reflective teacher, attentive to understanding needs and instances that the class inevitably presents, identifying particularly significant signs of specific student profiles. With the first task, teachers are invited to connect spontaneously and based on their own knowledge and sensitivity, characteristics, and behaviours. This warm-up activity is functional, on the one hand, to reflect on examples of concrete behavioural elements, on the other hand, to activate a reflection debate. "The teacher trainer will have the function to guide the discussion, explaining, for example, why some behaviours describe the profile of the creative pupil, in which terms the creativity declines, dispelling all doubts and confusion between creativity and the artistic domain" (Sorrentino, Pinnelli, 2021, pp.30-31).

In the Italian version to better improve the aspect of teacher training, a simulation of this path (a hypothetical training course conducted by a teacher

in a lower secondary school) was introduced that refers to the use of the first eight scales, i.e., those aimed at detecting the more transversal aspects that characterize a gifted student.

### **Methodology**

The structure of the training course present in the final version of the scales was based on field notes and observations following a short training course with 47 teachers from three distinct areas: South (Puglia), Center (Lazio) and Northern Italy (Emilia -Romagna), thanks to the collaboration of three distinct university institutions: the University of Salento, the University of Bologna and the University of Roma Tre. The sample of Lecce was composed of twenty-three teachers (18 curricular and 5 SEN teachers). The sample of Bologna was composed of ten teachers (5 curricular and 5 SEN teachers) and the sample of Rome was composed of fourteen teachers (7 curricular and 7 SEN teachers).

All the teachers had been invited to follow a short two-hour training course on the different models of reading of giftedness (Renzulli three-ring model, Gagné model, Monks model) and on the profiles of giftedness and another two hours on the use of the scales through the training for teachers. During the use of the teacher training exercises, the critical issues reported by the teachers, collected in field notes, were the starting point for the Italian adaptation of the scales and for the creation of the training simulation path (here presented), useful for teachers to interpret, on the one hand, the single items of the scales and to deepen the construct of giftedness, dispelling some myths and reporting practical examples.

Therefore, the methodology used was action research, which through training experiences conducted in natural contexts has brought out critical issues on which a teacher or pedagogist who wants to train colleagues in the use of the scales must focus.

In addition to explaining how a teacher should conduct training by accepting perplexities with a non-judgmental attitude, the simulation path offers specific reflections on the items that in the Italian validation have raised greater difficulties of interpretation.

The simulation path (Fig.1) focuses on the transversal scales. It starts with the description of a hypothetic environment and a class group of teachers guided by a hypothetical SEN teacher (Prof. Elisabetta) could conduct training using teachers' exercises proposed by Renzulli.

*Docente formatore:* prof.ssa Elisabetta, una docente di sostegno molto attenta al tema delle differenze, che ha avuto la possibilità di formarsi sul tema della plusdotazione all'interno di un percorso universitario.

*Contesto:* un'aula di una scuola secondaria di I grado dell'Istituto Comprensivo «G. Rodari» di Lecce, in un pomeriggio di marzo.

*Docenti in formazione:* quattordici.

- Quattro docenti fanno parte del consiglio di classe della 2<sup>a</sup>A, una classe definita «pensante» caratterizzata da un buon clima tra i ragazzi e un buon livello di apprendimento in generale. Nella classe ci sono due ragazzi con BES, una ragazza con disabilità intellettiva lieve e un ragazzo con ADHD prevalentemente inattento che non ha il sostegno. Il gruppo di docenti in formazione è composto da Giulio che insegna Italiano, Francesca che insegna Matematica, Antonio che insegna Arte e immagine e Ilaria che insegna Storia e Geografia.
- Quattro docenti provengono sempre dalla scuola secondaria di secondo grado, classe 2<sup>a</sup>B, una classe definita dai docenti «vivace» per la presenza di un gruppo di ragazzi che manifesta spesso comportamenti inadeguati; alcuni ragazzi provengono da contesti svantaggiati e sono presenti due alunni stranieri, arrivati da poco in Italia. Il gruppo dei docenti è formato da Sara che insegna Italiano, Anna che insegna Matematica, Celeste che insegna Tecnologie e Lorenzo che insegna Inglese.

Figure 1 Introduction of the simulation path. Source: (Sorrentino, Pinnelli, 2021, p.91).

As regards the first scale, “Learning,” according to the fields notes it was necessary to explain the meaning of applied thinking (See Key concepts figure 2), seen as being able to intercept the competence behind the knowledge and therefore to know how to use it in the so-called “task of reality”.

Continuing along the simulation path, the focus shifts to the creativity scale, which leads to reflecting on creative thinking and on the difference between original, fluent, and flexible thinking, complementary but different traits of creativity that can often be confused by the non-expert teacher.

## CARATTERISTICHE DEL PROFILO «APPRENDIMENTO»

**Esercizio 1** Individualmente, **abbinare i concetti chiave** elencati nella prima tabella con le frasi riportate nella tabella che inizia con «Lo studente/La studentessa dimostra» (inserire la lettera di riferimento).

**Esercizio 2** In piccolo gruppo, **confrontatevi su esempi specifici** di situazioni in cui avete osservato il comportamento descritto.

Concetti chiave		
A. Analitico	E. Comprensione concettuale	I. Induttivo
B. Conoscenza approfondita	F. Ampie conoscenze	J. Lessico articolato
C. Pensiero applicato	G. Abilità di ragionamento	K. Peripicace
D. Memoria	H. Pensiero astratto	

Lo studente/La studentessa dimostra...	Rif. lettera
1. conoscenza del vocabolario superiore rispetto ai coetanei.	
2. spiccata abilità nel fare generalizzazioni in relazione agli eventi, alle persone e alle cose.	
3. di possedere ottime conoscenze su di un argomento specifico.	
4. notevole abilità nel comprendere i principi non esplicitati ma sottintesi.	
5. di comprendere le relazioni causa/effetto in modo intuitivo.	
6. di comprendere argomenti complessi con il pensiero analitico.	
7. vasta gamma di conoscenze generali su argomenti diversi.	
8. abilità di ragionamento in astratto.	
9. di saper ricordare fatti accaduti molto tempo fa.	
10. di saper fare osservazioni acute e intelligenti.	
11. abilità nel trasferire le conoscenze da un ambito all'altro.	

Figure 2 Teacher training exercise for Renzulli Scales

The simulation path continues with a reflection on the motivation scale and on the definition of self-directed behaviour, differentiating it from that of intrinsic motivation. In fact, during the use of the training exercises many teachers confused these two aspects of motivation. Therefore, in the presentation of the simulation path, it is clarified that being self-directed refers to specific self-regulation and self-monitoring capabilities. In a passage of the simulation path it is reported: “When using the scales with a particular pupil in mind, you should keep in mind that the student who proves to have little need of the teacher’s guidance is the one who does not need to be continually solicited by external sources and knows how to guide himself on how to carry out an activity” (Sorrentino, Pinnelli, 2021, p.98).

The last interesting reflection on the characteristics of giftedness is the one made concerning the construct of leadership.

Deepening the Leadership scale, we move on to analyze some behavioral aspects that characterize a leader, and which were the object of discussion in the training meetings with the Italian sample. In practice, it is clarified that a student who drags his classmates into various situations such as theft of school material is respected by everyone, tends to manage conflict situations between classmates and, according to the teacher, is part of a gang of the neighbourhood, can also be considered a leader. In fact, in the simulation path it is emphasized through the words of Prof. Elisabetta that the task of the teachers is not to judge the type of leadership but to understand if these skills are present or not in the boy. It will be the objective of the teachers to activate all possible educational and teaching measures so that he becomes a positive leader within the class.

The second part is dedicated to deepening the acquisition of the path and to explain, through concrete examples, observable behaviors that characterize the different forms of talent. In this step which introduces the use of the second exercises of the Renzulli scale, the leading character of the simulation, Professor Elisabetta, describes together with the other teachers some concrete examples of behaviors of giftedness observed in students of their classroom.

### **Conclusion**

The training exercises introduced by Renzulli and the Italian simulation path can provide authentic learning of gifted behaviour. The simulation path presented constitutes a tool for a deeper understanding of the scales but above all an opportunity for reflection on characteristics and qualities which, although part of the teacher's usual vocabulary, often remain with blurred outlines and risk incorrect interpretations. The practice of these exercises (for example also with university students of the teaching courses) allows us to understand the border points and the most recurrent confusions. From the experiences described, it is considered useful to tackle the training path even with the most trained teachers and preferably close to the identification process to renew a sort of immersive action in the themes.

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## **Third strand**

### **Internationalising, decolonising and interculturalising teacher education programmes**



## **Debate for citizenship skills: a case study in secondary school**

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### **Abstract**

The contribution responds to the need of Italian educational and training research to promote the most functional methodologies in schools to increase the Global Competencies necessary to live as active citizens today in the new generations. Debate, or Regulated debate, which originated in ancient Greece, originally appeared in the form of disputatio at medieval age. Recently, Italian school have introduced the methodology as well. Promoted by the Ministry of Education (MI) and by the National Institute of Documentation, Innovation and Educational Research (INDIRE) already starting from primary school, the Debate has not yet found a similar application and consensus in lower secondary school as in other orders of school. By means of a case study conducted on a sample of 4 second classes of a Roman Comprehensive Institute, the study aims to detect the strengths and weaknesses of adopting the Debate in this school order for the development of skills of effective communication and active listening, collaborative learning, critical thinking trained by motions pertaining to the teaching of Civic Education, a discipline for which the development of research is expected to promote a curricular use of the Debate.

**Keyword:** Debate, Secondary School, Teaching Method, Competences, Soft Skills

### **Research topic/aim**

This study explores the potential of regulated debate as an instructional methodology of choice for teaching students' global competencies necessary to live today as active citizens.

Debate can be defined as an old teaching-learning strategy that presupposes an established position, either pro or con, on an issue, assertion, proposition, or solution to a problem (Fluharty GW, Ross H. 1996). Debate is also a strategy to persuade or convince other people to accept one's opinion. Its development can be traced back as early as the fifth century, especially to the figure of Protagoras of Abdera. He was one of the experts in rhetoric who could make the "worse (or weaker) argument appear the better (or stronger)" (Freely and Steinberg, 2005). In practice, debate provides reasoned arguments for and against a proposition between two contending individuals or groups. The Debate is considered in Italian schools as a teaching methodology able to train communication and relational skills, autonomous documentation skills and soft skills more functional to personal growth and well-being.

### **Theoretical framework**

According to some studies, students learn more effectively by analyzing, discussing, and applying content in meaningful ways, rather than by passively absorbing information. The Debate is useful for teaching soft skills such as listening and speaking, argument building, cooperative learning, critical thinking, research (traditional and computer-based), strategic notetaking, logical organization, critical reading, and evaluation. (Snider and Schnurer, 2002) However, Debate in the Italian school system is prevalent in 2nd grade secondary school, connected to the humanities rather than science and has not yet found similar application and acceptance in other school orders or among universities. (De Conti, 2019)

The school as a social institution (Dewey, 1897) trains language as a communication tool but needs a method that is capable of engaging students. As an instructional method, debating involves students in expressing their opinions from two competing perspectives with the goal of contradicting each other's arguments. The Debate method is valued by the school population as an educational experience through which we document and discuss contemporary issues. Feeling part of a study group that searches for the most reliable information on which to base the team's line of argumentation and learning from competitive confrontation how it is possible to be persuasive through effective communication and active listening places the Debate methodology in the groove of pedagogical

activism and social constructivism. In the longer term, debating helps students acquire better comprehension, application, and critical evaluation skills (Omelicheva & Avdeyeva, 2008). It improves students' listening and public speaking skills (ibid.) and opens opportunities to develop oral communication skills (Combs & Bourne, 1994), creativity (Vo & Morris, 2006), and empathy (Bell, 1982).

The U.S. NAUDL (National Association of Urban Debate Leagues) records forty thousand students enrolled in as many as five hundred debate schools, showing that debate has positive effects where alternative solutions have failed. A recent survey conducted in the United States (Ko, TM e Mezuk, B. 2021) found the positive results NAUDL has had in children from disadvantaged, poor families. The study showed a 25 percent increase in study motivation, reaching 70 percent among African American students. Learning to deal with discussions, by addressing them in the right way turns into a trump card in job interviews as well. The Debate is an exercise that trains the mind not to focus on personal opinions but to accept opposing points of view. Studies carried out by teachers who have been teaching the discipline of debate for years have revealed an improvement in pupils' study methodology as well, which moves away from the mnemonic method, giving way to dialectic, group work and critical thinking. (Koklanaris, Mackenzie, Fino, Arslan & Seubert, 2008). Educating to ask questions, teaching argumentative logic, and training to recognize the positions of others must increasingly be at the heart of citizenship skills curricula (Benvenuto, 2021)

Italy, too, has recognized the importance of constructive debate in the classroom, but its practice is still tied to virtuous initiatives by teachers who recognize its importance for all subjects: for science, where critical thinking is necessary, and for the humanities, where argumentative skills allow for connections and reflections of great importance, but also for Civic Education, a discipline with a troubled history as important for civil coexistence.

Civic Education, a discipline recently re-introduced into the curricula of the Italian school system for all levels of education, (L.92/2019) aims to train students' global competencies in accordance with the two most important European educational policies: the Strategic Framework for European Cooperation in Education and Training (ET2020), and the Strategy for Building a European Education Area. These are policies that conceive education as a fundamental means of building active and responsible European citizenship (European Commission, 2020). The idea of civic education promoted in the Union is based on the need to respond to the problem of educating young people in citizenship in a context of social change that challenges concepts that were believed to be acquired, borrowed

from previous generations such as the concepts of civic coexistence, nationality, and citizenship.

Some studies (Missira, 2019; Eurydice, 2017; Nussbaum, 2010) have seen elements in these social changes such as distrust of institutions, the economic crisis, or the alleged ineffectiveness of the educational system in sustaining democratic values. Hence the renewed interest in civic education and in the role of schools in forming citizens of a changing world change (Kennedy, 2012)

The introduction of a new discipline into the Italian school curriculum, however, risks failing the goals of education for active and democratic citizenship because of the way it is taught in the law. The teaching of Civic Education has been programmed in a cross-curricular mode with other teachings, given to all teachers regardless of their expertise, and has been accepted as secondary by the school population.

### **Methodological design**

The proposed study is part of a Ph.D. project in Social, Developmental and Educational Psychology at the University of Rome La Sapienza. Project tutors are Guido Benvenuto and Patrizia Sposetti.

The second year of the doctorate was devoted to case study research conducted on a sample of four second classes of a Roman Comprehensive Institute, IC Nino Rota. The study aims to detect the strengths and weaknesses of adopting the Debate in this school order for the development of skills of effective communication and active listening, collaborative learning, critical thinking trained by motions pertaining to the teaching of Civic Education,

For the case study, this research made use of mixed methods: qualitative for teachers who introduced Debate as a teaching methodology in their classes and quantitative for students who responded to the IEA ICCS 2016

For teachers, the focus group was chosen to develop the discussion and voice their opinions. The number of participants was higher than planned, as the support teacher joined the Debate teacher in the classroom. Five teachers from four classes in the same institution participated in the focus group of approximately one and a half hours, which was recorded and transcribed. During the focus group the teachers positively evaluated the classroom debating experience for the students' increased communicative awareness and ability to work in groups. Appreciation for the methodology was also expressed regarding the citizenship skills acquired during the collection of data for the team argumentative line.

Of the eighty-six students in the experimental group sample, 78% answered a questionnaire on citizenship skills created by integrating the survey IEA ICCS 2016 database, licensed free of charge by IEA, with some Debate items developed for the research. The first part of the citizenship skills questionnaire was administered to the control group represented by the students of the other four second classes of the institute that did not introduce the Debate methodology in their teaching. Comparisons between the experimental group and the control group revealed confirmation of the methodological effectiveness of Debate in shaping the citizenship skills of students in this school order although data on the school's evaluation of the students from the examinations are awaited.

### **Expected conclusions/findings**

In England, debating has for years been a curricular discipline in Anglo-Saxon and American colleges, normal schools, and universities. From the UK, the practice soon spread to the US, where full-fledged debating societies were founded with the aim of learning how to speak in public and debate with others on any subject. Debating has also been seen to improve learning outcomes. Immediate positive effects include increased acquisition of knowledge by reinforcing subjects already taught (Kennedy, 2009).

The study aims to promote a curricular use of Debate to teach Civic Education in schools including Italian schools, for learning about controversial topics and questioning previous beliefs (Bell, 1982). Debate, due to its interdisciplinary, playful, and experiential nature, meets the requirements of the new Civic Education and is instrumental in promoting a school that enables its students to learn to live with and in democratic values. For this reason, a curricular use of Debate for the teaching of Civic Education would be a solution to the dispersion of the way the discipline is taught and the educational goals it sets out to achieve.

### **Relevance to international educational research**

The study has the task of reconnecting Italian schools with schools in other countries that have gone beyond frontal teaching and conventional teaching methods to invest in building students' critical thinking for the exercise of active and aware citizenship. This is possible if schools' curricula accept to renew themselves with the inclusion of a methodology capable of training the global competences of people, teachers, and students, who represent an essential lever for progress and democracy.

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# Enhancing scholarship holder international students' intercultural competencies with collaborative learning

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## Abstract

The UN and EU's intentions to internationalize higher education have led to the introduction of study abroad programs receiving scholarship-supported foreign students. Our classroom experiences in Eastern European tertiary education suggest that there is a limited number and scope of possibilities to promote foreign students' cultural integration. Although there are formal and non-formal opportunities for cross-cultural communication, students typically restrict their interactions to those who are from the same nation. Our action research intended to respond to this challenge by exploiting two Ph.D. courses in the fall semesters of academic years 2020/2021 and 2021/2022 taken by N=14 and N=17 foreign students, respectively. The syllabuses of the courses entitled Entrepreneurial Culture and Education, and Teaching and Assessment Strategies in Teacher Education were fixed; however, we could implement their content with adaptive methodology and active learning. Educators' observations, photo interviews, and students' reflective journals based on photo documentation were processed with qualitative narrative analysis. Results are concurrent, collaboration-based learning can shape students' thinking and attitudes toward others during a short period of time. Other significant achievements are students' participation in an international conference and their TED-Ed-styled talks.

Keywords: intercultural competencies; collaborative learning; international students

## Introduction

The United Nations (UN) and European Union's (EU) intention for internationalization have led to the introduction of study abroad programs, receiving and accepting scholarship-supported foreign students- offering a bright future ahead of them in terms of academic and professional success. According to the Organisation for Economic Co-operation and Development (OECD), the number of international students has grown considerably in the early 21<sup>st</sup> century (Riaño & Piguet, 2016). An international student is generally defined by the OECD as one who 'has crossed a border to study', in simple terms, the students who are studying anywhere in the world other than their country of origin.

There is quite a large number of international students in Hungary, most are state-funded scholarship holders. According to Statista (2022), approximately 32.4 thousand international students were studying full-time in Hungarian universities during the school year 2020/2021 and by 2021/2022 it increased to 34.8 thousand which means that foreign students are rapidly growing in the country. International students, being far from their home country and exposed to new cultures and environments, are said to face more challenging conditions compared to local students. According to Aung (2019), the challenges international students face are generally related to social and cultural differences which then cause academic and language issues; moreover, due to the unfamiliar and different circumstances, they also tend to experience immense psychological stress (Chen, 1999). This leads to the idea that the universities' assistance to international students in terms of cultural integration<sup>1</sup> is an important factor for them to cope with the new environment and then further leads to academic success.

In an international classroom<sup>2</sup>, students are encouraged to work with diverse international peers and colleagues, however, due to the familiarity brought by the same nationalities, international students tend to limit their circle to peers from the same nationality. Though this is not considered a negative behaviour, this somehow affects the inclusivity and openness of the classroom to diversity. Furthermore, internationalization ideally means that

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<sup>1</sup> Cultural integration, understanding and new cultural habits such as, but not limited to, values and beliefs, religion, and language of another group (Algan, Bisin, & Verdier, 2012)

<sup>2</sup> A classroom that includes students learning and collaborating with peers from different nations.

“everyone can work with everyone” yet how can that be when students limit their interactions to their fellow countrymen? Our classroom experiences in Eastern European tertiary education suggest that there is a limited number and scope of possibilities to promote foreign students’ cultural integration. It is limited but what is important is that there is, and what more way to better the international experience than to use them and expand them through utilization and improvement?

Active learning is one of the learning methods identified by the authors that can promote the cultural integration of international students. According to Bonwell and Eison (1991), active learning “involves students in doing things and thinking about the things they are doing” (p.19) which means that the students do not just listen to the traditional classroom lectures but have to fully participate in the teaching-learning process. Active learning entails that the learners are responsible for their learning (Handelsman, Miller, & Pfund, 2007) which means that learners came to class fully ready to participate in the learning process. Having this attitudinal shift alone can help the student ease into the diverse classroom and lighten the process of integration since the student is prepared to participate. Another method that was also identified and utilized by the authors in the study is collaborative learning, “an educational approach to teaching and learning that involves groups of learners working together to solve a problem, complete a task, or create a product” (Laal & Ghodsi, 2011). This type of learning is an umbrella term used to identify various educational strategies used for cooperative and interactive learning by students and teachers. Collaborative learning does not only enhance critical thinking (Gokhale, 1995) but also boosts diverse connections (Webb, 1980) and encourages distinct understanding (Swing & Peterson, 1982).

This paper aims to present the authors’ and educators’ ways to enhance scholarship holder international students’ intercultural competencies<sup>3</sup> with collaborative learning.

### **Research Questions and Significance**

This research identified that although there are formal and non-formal opportunities for cross-cultural communication, students typically restrict their interactions to those who are from the same nation. The main goal of

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<sup>3</sup> Intercultural competencies are the students’ abilities and effectiveness to interact and communicate with people from other cultures (Odag, Wallin, & De Santis, 2015).

this study was to enhance the scholarship holder international students' intercultural competencies through the utilization of the active learning method, specifically, collaborative learning. The study focused on answering the following research questions:

(1) What classroom strategies compel students to engage with other nationalities?

(2) Do international students value collaborative learning with other nationalities?

(3) What are further student achievements does collaborative learning promote?

### **Theoretical Framework**

This research study highly considers the educator's teacher cognitive thinking skills. Several studies (Ledniczki & Hercz, 2019; Falus, 2001; Schön, 1983) strongly argues that the teacher's thinking, knowledge, and opinions configure their way of teaching and establishment of activities, thus, how a teacher handles the class is highly dependent on the latter's perspective and opinion. The educator in the study believed in the application of the collaborative learning method, which is rooted in Lev Vygotsky's idea of the Zone of Proximal Development, specifically scaffolding learning. To assist learners to become independent, Vygotsky drafted scaffolding as a tool for growth (Kurt, 2020), hence learners were tasked to complete assignments through manageable steps to achieve goals. Further studies (Shabani, Khatib, & Ebadi, 2010) identified that the learners collaborating with a skilled instructor or knowledgeable peers supported the advancement of learners in connecting the concepts. Moreover, collaborative learning, as defined by Smith & MacGregor (1993), is a term used for various educational approaches that include an intellectual effort by both students and teachers. In the usage of the collaborative learning method, it is expected that learners rely on one another to accomplish tasks that they otherwise would not be able to complete alone, which then fosters positive interdependence and individual accountability (Gokhale, 1995). It is emphasized that through this method, learners learn through interaction and engagement with their teachers and more competent peers. Collaborative learning requires students to work in pairs or groups since it involves peer-to-peer learning which advocates deeper thinking in the classroom (Gokhale, 1995). Through such activities, the learners will develop not only their oral communication but high-level thinking, self-management, and leadership skills.

## **Methodology**

### ***Research Participants***

This research was conducted in two classes at the University of Szeged, a public research university in Szeged, Hungary. Two Ph.D. courses having the same number of classes administered in the fall semesters of academic years 2020/2021 and 2021/2022 were identified by the educators; (1) Entrepreneurial Culture and Education Students (2020/2021) N=14; and (2) Teaching and Assessment Strategies in Teacher Education (2021/2022) N=17. Both courses were administered by having three meetings per semester, with five hours for each session. The Entrepreneurial Culture and Education Students was administered through online classes while the Teaching and Assessment Strategies in Teacher Education was administered in a hybrid<sup>4</sup> form. The respondents of this study were all international Ph.D. students in the doctoral school of education.

### ***Case Study***

This research was an attempt to do a case study about the intercultural competencies of international students with the utilization of collaborative learning. Case study is an appropriate method to be used when a concurrent phenomenon is to be analyzed in a natural setting (Patnaik & Pandey, 2019), it intends to take a look at a situation to develop and advance understanding (Cousin, 2005). The educators involved in the study conducted regular classes and utilized collaborative learning tools and tasks, then through observation, students' diaries, and reflective journals, the results were gathered. The educators' observations, photo interviews, and students' reflective journals based on photo documentation were processed with qualitative narrative analysis. Thus, conducting a case study was significant for the study since the method permits an in-depth investigation of the real through building a connection between the researchers and the participants in the natural setting (De, Castro, Coimbra, et al., 2013)

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<sup>4</sup> The hybrid classroom is a teaching-learning method that utilizes both online and face-to-face learning that proposes a more flexible learning environment for both on-site and individual remote students (Raes, 2022; Hentea, Shea, & Pennington, 2003).

## Results and Discussion

The syllabuses of the courses entitled Entrepreneurial Culture and Education and Teaching and Assessment Strategies in Teacher Education, with all its competencies and objectives were still followed, the educators just provided learning activities that manifested collaboration.

### *What classroom strategies compel students to engage with other nationalities?*

The educators<sup>5</sup> observed the application of the collaborative learning method in the international classrooms with the usage of these learning activities. The class started with peers introducing themselves, a regular class start-up but with a twist, a pair activity that lets the participants converse and get to know each other naturally, and at the end of a certain period of time, the pair will have to introduce the other to the class. Starting with this activity, the international students were already exposed to new peers and had the chance to talk to other people from other cultural backgrounds. One diary excerpt from an international student said,

“Our teacher led us through this activity, which was extremely fun. Initially, this exercise felt awkward to me since I naturally consider this learning style to be for children rather than adults but as we progressed, it became clear that learning can in fact occur in simple ways such as this, regardless of age.

Also, in a class with people from all over the world, I expect wildly diverse answers, but after just a few minutes of conversation, I realize just how similar everything is. Coincidentally, that was also the first time I met most of my classmates and that exercise helped me to get to know them a lot in a very short period of time. Thus, it proves that this method is effective for both kids and adults.” – International Student A

One of the main things that the international students realized from this activity was that they had more similarities than differences. For some reason, the students’ primary inhibition in an international classroom is that they are different from one another which is why, as much possible, they do not want to associate themselves with others- especially other nationalities, due to being intimidated or embarrassed. The implication of this excerpt is

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<sup>5</sup> The educators and researchers in this study are the same people so both can be interchanged in usage.

that due to the activity, the student realized that this type of activity could help them socialize with one another in a learning environment. According to Peko and Varga (2014), daily classroom involvement enables the students to widen their knowledge through collaborating with peers on various tasks, and for this to happen, the students should be able to feel comfortable in sharing their thoughts in the classroom which may start by introducing themselves freely to their peers. The mundane introduction may work itself but establishing a supportive environment for students through encouraging them to be creative and independent in formulating and sharing their views would result in a more inclusive learning environment (Bonwell & Eison, 1991). Other activities that were also utilized during the whole duration of the course were: think pair share, role play, group debate, ted talk, and reflective journals.

***Do international students value collaborative learning with other nationalities?***

Everyone in the class mentioned in their reflective journal their appreciation for the collaborative teaching-learning strategy, not only because of the active learning environment but also due to the reason they get to interact and engage with their international colleagues. As explained by the students, it was difficult for them to engage with others, especially their peers that came from different cultural environments because of the possibility of having huge differences between cultural backgrounds which may result in conflict, however, due to collaborative learning, the students realized that they have more similarities than differences. With the administration of these activities, the educators also made sure that the students had the liberty to choose their preferred method or outputs for their reflective journal, may it be online, handwritten, or printed. The students were allowed to fully present themselves freely, which made them feel included and comfortable in class.

“As students in a five-hour class, these activities [collaborative learning activities] helped to increase our ability to concentrate in the classroom and stay on task as opposed to simply listening to the content, we engaged with [the activities and our peers].” – International Student B

International student B’s statement suggests that engagement was more evident when collaborative learning activities were utilized in the classroom activities. Hayat et al., (2017) and Kusumoto (2018) studies showed that with active learning, high student involvement and engagement were observed, and throughout the whole practice, the critical thinking and reasoning skills of the students were developed as well. Though there is no direct evidence

that these skills are developed due to active learning, it is evident that as educators encourage students to be inquisitive, participative, and communicative, the learners cooperate interactively in class which leads to the development of various skills.

***What are further student achievements collaborative learning promotes?***

Active learners are actively engaged, whenever they are solving a problem, debating an issue, or researching a concept, they are processing ideas and deepening their understanding, and they are less likely to be distracted or multitasking on a Zoom or Google Meet session. Multiple studies (Tinnesz et al., 2006; McKinney et al., 2006; Kiener et al., 2006) have shown that when classes were more engaging and inclusive, students tend to be more active in the learning process.

“The class was full of interactive exercises, making it one of my favourite classes. I found it a way to get rid of study stress as I had to learn in a social environment and have fun too after a long time of working under stress and pressure. I would like to give my students such relieving and safe environment to learn...” – International Student C

Collaborative learning not only encourages engagement between international students but also helps develop self-esteem and confidence for TEDx-like talks, high mental process (Lev Vygotsky), promotes intercultural similarities and differences reflection, and establishes a healthy social environment which sparks the interest and enthusiasm of students to participate and learn in class in a fun way. Ryan and Patrick (2001) studies showed that certain learning environments affected the motivation and engagement of learners and International student C’s statement can be an implication that when students see the classroom as a fun and comfortable learning environment, it sparks up their interest more which enables them to engage more, not only with the class activities but also with their international peers.

**Conclusion**

This study sought to enhance scholarship holder international students’ intercultural competencies with collaborative learning over the course of two semesters in two different classes. Throughout the study, it was observed that the collaborative learning activities encouraged the students to take part in the classroom activities actively. The utilization of active learning, specifically collaborative learning activities, prompted the learners to

consider the classroom as a social learning environment which enabled them to be proactive in class and led them to participate interactively in the learning process by independently sharing their ideas and thoughts with everyone. It was also observed that through the activities the students are now more open to diversity in the classroom and concluded that even though they came from different cultural backgrounds, they have more similarities than differences. Conclusively, results show that the utilization of collaborative learning increased the engagement of international students which led to the enhancement of their intercultural competencies. Increasing the usage of collaborative learning methods has the potential in producing an inclusive and integrative learning environment.

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# Prestige of the Teaching Profession: Development of the Research Tool

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## **Abstract**

The prestige of the teaching profession is still a resonating topic nowadays in the Czech Republic, and as results from international research show, it is still problematic. Teachers themselves do not consider their job prestigious, which can have unfortunate consequences. In order to correct the current state, however, it is necessary to understand certain areas, which determine the prestige of the teaching profession and which are responsible for the prestige of the teaching profession being perceived as low by teachers. The aim of this text is to present the process of making and statistically verifying the research tool, which measures the prestige of the teaching profession in three dimensions. In a research sample (N=138) consisting of students of education, PCA was calculated, and in an extended sample including practicing teachers (N=275), CFA was calculated. McDonald's Omega was used to calculate the reliability of measures. Data analysis shows that the three-dimensional model is acceptable and usable for other research into the prestige of the teaching profession.

**Keywords:** occupational prestige; prestige of teaching profession; research tool; multidimensional research tool; confirmatory factor analysis

## Introduction

In the recent years, Czech education has again gone through changes, which should lead to the aim of increasing its quality. In accordance with the main strategic document of the education policy of the Czech Republic, the Strategy 2030+ (MEYS, 2020), great emphasis is put on the teaching profession and dealing with its present main challenges. According to the Strategy 2030+ (MEYS 2020), professionalization of the teaching profession should lie in creating a profile of teaching competencies, supporting and changing the concept of teachers' further education, increasing the prestige of the teaching profession, and getting young and quality candidates of this profession as a result, and followingly, providing them with enough support in order for them to stay in education. Even though these declared aims are in the newest strategic plan of the education policy, they are not new topics in Czechia. During the last thirty years, there have been repeatedly opened practically all the mentioned aims, which were supposed to lead to reforms in the teaching profession. Most of them are a part of the professionalization of the teaching profession. The topic of systematic professionalization of the teaching profession has been repeatedly opened up since the change of regime in Czechoslovakia at that time. Real changes, however, were mostly only on a declarative level or as the Strategy, but they were not reflected in practice (Spilková & Dvořáková, 2004; Spilková, 2008). Repeatedly, topics reacting to the always-present problem – lack of quality teachers – have been opened. Even the strategic plans seem to be a response to the current state of the teaching profession in Czechia.

And what do data have to say? According to the Ministry of Education (2019) research, the state of the teaching profession is not optimistic. The age average is getting close to 50 years (with it being even higher in some subjects), approximately 6.5 % of teachers are planning to leave within the first year, in some regions it is problem for head teachers to find qualified teachers, and the amount of teachers younger than 30 years is only 8.5 % (MEYS, 2019). These findings of MEYS are also confirmed by the last TALIS 2018 research (CSI, 2020), which implies that, among other things, head teachers consider the lack of qualified teachers to be a great issue. 54 % of young teachers stated that this career was their first choice, 16 % of teachers think society appreciates them, 28 % of teachers are satisfied with their salary, and 58 % of teachers think the benefits of this job outweigh the negatives (CSI, 2020). What is more, this current state is underlined by a stagnating interest in studies at faculties of education (MEYS, online). Practically the above-mentioned problems come from a lack of quality

candidates for the teaching profession, which is caused by the low attractiveness of this job in society, mostly among young people.

Low attractiveness of the job among young people is very much connected with the low prestige of the teaching profession. Prestigious professions are attractive to more applicants and they are associated with highly skilled workers. It is not different in the teaching profession, where higher prestige might mean a tremendous positive impact on good-quality collectives of teachers and education as a whole (Hargreaves, 2009). The possibility of higher prestige having this positive impact on the whole of education is also confirmed by better results of pupils from regions in which there is high prestige in the teaching profession (OECD, 2020). It is also important to be aware of the difference between prestige attributed by society and prestige perceived by teachers themselves. In the Czech Republic, there is a rather high prestige of the teaching profession in society. Based on teaching at primary, secondary school, or university, teachers are in the top ten jobs (Tuček, 2019), even though teachers themselves do not find their job prestigious at all (CSI, 2020). There is also a difference in the already mentioned age groups as among older people, teachers are more appreciated than among young people (Tuček, 2019).

Lower prestige of the teaching profession is, of course, a topic not only in the Czech Republic. We can also see it in other post-socialistic European countries, and it is mainly prestige perceived by teachers. A possible connection between similar attributing prestige of profession and regime was noticed by Penn (1975), who compared rating prestigious jobs in (socialistic) Czechoslovakia, Poland, and the USA in the 1970s. He found that, ratings of Czechoslovakia and Poland were very similar, while the one from the USA was distinctly different. It is interesting in this research that, there was a difference in the prestige of the teaching profession in Czechoslovakia before and during socialism. While in 1937, teaching was the second most prestigious job, in the 1970s, it moved several rungs down (Penn, 1975). The socialistic regime has had an impact on the teaching profession, its status and prestige in society, but also perceiving prestige by teachers, is also in other research from these post-socialistic countries (Berzin et al., 2022; Khusnutdinova, 2017; Tastanbekova, 2020). Among the most frequent findings of why prestige of the teaching profession is so low in these countries are low salaries (Berzin et al., 2022; Khusnutdinova, 2017; Tastanbekova, 2020; Tomsikova et al., 2021), huge workloads (Berzin et al., 2022; Khusnutdinova, 2017; Bilbokaitė-Skianterienė & Bilbokaitė, 2018), disrespect in society and among pupils (Berzin et al., 2022; Tomsikova et al., 2021), and low level of qualification of teachers (Tastanbekova, 2020; Bilbokaitė-Skianterienė & Bilbokaitė, 2018).

### *Occupational prestige*

Probably the first person to have tried to clarify the term prestige and occupational prestige was sociologist Veblen in his work *The Theory of The Leisure Class* already in the 19<sup>th</sup> century (Veblen, 1999). Due to the time he lived in, Veblen (1999) perceived occupational prestige differently from present-day authors. He was, however, in agreement with them on some main points of the concept. They are as follows: securing and rewarding the occupation, respect in society, and education of those of that profession (comp. Weber, 1964; Treiman, 1977; Veblen 1999; Hoyle, 2001). On the contrary, in disagreement with the more modern grasping of the concept of occupational prestige was Veblen (1999) when it comes to loafing, meaning that one does not have to do anything useful for society, and does not have to create economic value, instead, one can do noble activities such as study, art, or dog breeding. Nowadays, prestigious occupations are mostly those which create values for society, whose representatives work hard and have a certain amount of responsibility in society (Majchrowska et al., 2021).

Even researchers examining prestige and occupational prestige are aware of the problem with its clear definition. For example, Ingersoll and Perda (2008) reflect that it is extremely hard to examine occupational prestige for its high degree of subjectivity. This is supported by findings from other research, which are in total disagreement with how we perceive elements forming prestige. Benzin et al. (2022), for example, mention one of the causes of occupational prestige fall as a high degree of responsibility being present in the teaching profession. However, generally speaking, a high degree of responsibility is considered to be part of those occupations which deserve high prestige in society (Weber, 1964; Treiman, 1977). Many others, on the other hand, find salary and financial security as a very important and inseparable part of occupational prestige (Ingersoll & Perda, 2008; Palouček & Zounek, 2021; Fwu & Wang, 2010; Hoyle, 2001; Veblen, 1999), while findings from other research (Zhan, 2015) do not support these claims. In the same way, there are charts rating occupations based on their prestige (Tuček, 2019); in the Czech Republic, doctors and nurses have been at the top in the long term while they are not among financially satisfying professions. Penn (1975) described another occupational prestige determinant as problematic and very subjective, and that is respectability in society. Respectability, or social image, depends very much on the composition of society (Penn, 1975) and its preferences. Also, Koller et al. (2018) noticed the impact of social image on occupational prestige, and they describe changes in the presentation of teaching and changes in perceiving teachers in general.

Despite prestige being perceived subjectively, it is necessary to define occupational prestige in the way it is looked upon in this research and text. When it comes to understanding prestige, I am going to lean towards Hoyle (2001), who claims that occupational prestige comes out of salary, knowledge, and social image. According to Hoyle (2001), these elements make occupational prestige in society, and they also appear in concepts of occupational prestige of other authors (Veblen, 1999; Weber 1964; Fwu & Wang, 2010), so one might as well say that they more or less match.

### ***Summary***

The prestige of the teaching profession plays an important role in the real state of teaching in the country. The amount of prestige can have an impact on the choice of occupation (Zhan, 2015), staying in it (Khusnutdinova, 2017), satisfaction with it (Orlov, 2000), improving it (Fwu & Wang, 2010) and professionalization of it (Ingersoll & Perda, 2008). On the contrary, what can have an impact on occupational prestige is education and knowledge of its representatives, financial conditions, and social image connected with the occupation (Hoyle, 2001).

### **Methodology**

#### ***Approach to Creation of the Scale***

I decided to create my own research tool due to the absence of one being able to measure occupational prestige in a higher complexity, which would allow seeing this matter in depth and reveal even differences in individual dimensions from which occupational prestige comes. Ingersoll and Perda (in Ballantine & Spade, 2007) consider research of prestige difficult, because as such the concept is extremely subjective. When I asked the audience at the ATEE Winter 2022 conference the question: “What does occupational prestige mean to you?” it was clear that it means different things even to teachers and university teachers. Some of the answers I received were, for example: respect, best candidates, social appreciation, good pay, pay equal to hard work, and others. It is this subjectivity that was one of the first challenges I faced when creating the tool and which I had to deal with.

During operationalization of the concept of occupational prestige, I used as a base the concept of occupational prestige and also the context of the teaching profession in the Czech Republic (more can be found above in the text). While creating the items, I based my decision on three areas which

occupational prestige comes from and which might offer a better insight into the matter. They are these areas: Knowledge, Social image, and Salary. As I said earlier in this text, these are areas that have been appearing in the works of sociologists for over one hundred years. For the individual items to correspond to the expected dimensions, the process of their creation was consulted with experienced colleagues at the university. After the creation of the first draft items, I started with the first one of them – a qualitative pilot with teachers and students of education (N=5). This was done through interviews about the suggested scale with each of them individually. If the meaning was unclear or not matching everyday reality content according to some, some items were dropped from the set, or formulated differently to be understandable for the target group. Consultation with the target group is a recommended step (Jebb et al., 2021), which can help with the final look of the research tool.

I entered the quantitative verification with a scale consisting of the following items in the expected three dimensions (the translation is literal from Czech to English):

A) Knowledge

- In the Czech Republic, there are mainly teachers with professional education.

- Teachers show highly professional education while working.

- Teachers in the Czech Republic are highly competent.

- Teachers have deep knowledge of theory in their area.

- Teachers have deep knowledge of theory in the area of pedagogy.

B) Social image

- Pupils and parents respect teachers.

- Media presents teachers as a respectable profession.

- Public respect the teaching profession.

- Government and its representatives respect the teaching profession.

- Teachers consider the teaching profession respectable.

C) Salary

- The teaching profession offers a motivational rate of pay.

- The teaching profession offers a comparable rate of pay with similarly demanding professions.

- The teaching profession is attractive for people of interest due to its attractive rate of pay.

- The teaching profession is attractive for people of interest due to its attractive perks.

### ***Data Collection***

Data collection happened in person in lessons at the university. Respondents were introduced to the research proposal in short and they were explained why there was pilot testing. Subsequently, they received instructions about filling in the form, which was distributed online using Google Forms. The respondents filled in the forms on their notebooks and smartphones.

### ***Sample***

The first pilot testing, which consisted of consultation of the items with the target group, happened as interviews with individuals (N0=5). Two of them were young teachers, one was a student of education, and two were experts in education at the university with many years of experience in education.

There were 138 students of education in their first and third semesters of Bachelor studies at the university in the sample for the quantitative pilot testing. The choice of the students was based on their availability, so more students in this target group were addressed with a request to fill in the form.

Return was almost 70 % (N1=138). The size of the sample came from the need for calculation of the Principal component analysis, which means more than 100 respondents according to some authors, or 10 respondents for each item according to others (Rabušic et al., 2019). For the pilot testing, students of education instead of teachers were used, as it is common in social science research to have a sample based on their availability (Gavora & Wiegerová, 2017; Klimek, 2020).

An extended sample with the purpose of verifying the structure of the form consisted of students of education from the pilot testing (N1=138) and teachers (N2=137) of life-long programmes (Act No. 563/54 Collection of Law) from seven work places offering this education. I focused on these teachers as my target, for my main research focuses specifically on this target group. All workplaces in the Czech Republic offering this education were asked to participate in the research; one, however, did not open for the lack of people of interest, and one rejected participation. The final sample then was (N) 275 respondents.

### ***Ethical Aspects of Research***

Participants in the research confirmed electronically that they were participating willingly and that they agreed with data processing and later using the data for research and educational purposes and for publication.

There were no sensitive or personal information collected and all data were anonymized in case of need (if the respondents willingly left their e-mail address). Representatives of the work places who allowed me to collect data were reassured that neither their name, nor their work place's would be published, and at the same time, there would be no non-anonymous comparison of the work places among each other.

### *Analysis*

As this was the first field-test with the newly created tool, it was necessary to verify its structure and psychometric characteristics. After checking and editing data in MS Excel, I approached the data analysis in SPSS and JASP applications. Using descriptive statistics, I looked at arranged data and functionality of the four-degree scale, which was used in this tool. I used correlation matrix results for overview of all the items in the research tool. This was followed by calculations for Principal component analysis, which is to reveal the inner structure of the form and tell us more about validity of this newly created tool. In PCA I used the sample (N1=138) of students of education and watched KMO indicators, Bartlett test, Factor Loadings and cumulatives. The values I determined were  $KMO > 0,5$  and  $Bartlett\ test < 0,05$  (Hair et al., 2013; Tabachiuck & Fidel, 2006), Factor loadings  $\geq 0,3$  (Rabušić et al., 2019). The default settings for PCA calculation were Eigenvalues  $> 1$  (Rabušić et al., 2019) and orthogonal rotation Varimax, because I had expected the components (or factors) not to correlate, or reach only low correlation. After extraction of components, I moved to calculation of reliability of each extracted component and the whole tool. To calculate the reliability, I used McDonald's Omega, which is recommended for multifactorial tools (Dunn et al., 2014). The minimal value of McDonald's Omega is usually 0.7 and more (Dunn et al., 2014), however, even lower values are tolerated in social-science research (Menon and Azam, 2020).

After reduction of variables using PCA, I wanted to verify functionality of the structured model on the extended sample (N=275) using the Confirmatory Factor Analysis. I verified a three-dimensional model, which, in agreement with expectations, was revealed also with PCA, and I observed indicators CFI, TLI, RMSEA, SRMR and normed chi-square ( $\chi^2/df$ ). A good score in CFI and TLI is considered value over 0.9 (Meschede & Hardy, 2020); some authors, however, consider acceptable even lower values (Prosen et al., 2021). Hooper et al. (2008) mention as a good value for RMSEA and an acceptable one for SRMR under 0.8. These values, however, are not fixed, though it is appropriate to get as close as possible to them, according to Yu (2002). The often used chi-squared is criticised by authors for its being too

distorted by influence of the size of the sample, hence it is preferred rather to watch normed chi-square, value of which should be between 2 and 5 (Hooper et al., 2008).

### ***Results***

Descriptive statistics revealed that respondents were using the whole scale. Standard deviation obtained in all variables similar values and did not represent too high a value given the average result. More details can be seen in Table 1.

Table 1 *Descriptives*

Variable	N	Minimum	Maximum	Mean	Std. Dev.
1	138	1	4	2.93	0.624
2	138	1	4	2.63	0.568
3	138	1	4	2.41	0.550
4	138	1	4	2.81	0.599
5	138	1	4	2.25	0.640
6	138	1	4	2.10	0.631
7	138	1	4	2.13	0.762
8	138	1	4	2.02	0.645
9	138	1	4	2.23	0.786
10	138	1	4	2.80	0.794
11	138	1	4	2.22	0.792
12	138	1	4	2.07	0.737
13	138	1	4	1.86	0.797
14	138	1	4	2.40	0.779

One can see in Table 2 that KMO obtained value 0.718 in the pilot testing and Bartlett's test was significant on the level 0.0001.

Table 2 *KMO and Bartlett's test values*

KMO	0.718
$\chi^2$	376.825
Df	78
sig.	0.000

PCA with settings Eigenvalue more than 1 explored three components, which included three, five and five variables. Factor loadings reached value over 0.42 in each item except for one (item 14) and was clearly put to one component. Item 14 was eliminated from further analysis for its low factor loading and saturation of all three components. Overview of the individual items can be seen in Table 3.

Table 3 *Component loadings*

Variable	Component 1	Component 2	Component 3
1	0.534		
2	0.770		
3	0.699		
4	0.423		
5	0.552		
6		0.667	
7		0.657	
8		0.795	
9		0.466	

10		0.496	
11			0.795
12			0.808
13			0.800

Three explored components explain 49.8 % variability. The first component explained approximately half of it. Eigenvalue was in all three components significantly over 1. A clear overview can be found in Table 4

Table 4 *Components characteristics*

Component	Eigenvalue	Proportion var.	Cumulative
1	3.266	0.251	0.251
2	1.737	0.134	0.385
3	1.473	0.113	0.498

Reliability tests ( $\omega$ ) obtained with individual components values between 0.6 and 0.8 in the pilot testing. The whole scale reached value  $\omega= 0.735$ . A clear overview can be found in Table 5.

Table 5 *Reliability tests values (N=138)*

Scale	Component 1	Component 2	Component 3
$\omega= 0.735$	$\omega= 0.600$	$\omega= 0.663$	$\omega= 0.800$

Fit indices in confirmatory factor analysis on the extended sample (N=275) had in RMSEA value 0.07 and in SRMR 0.066. Incremental fit indices or Relative fit indices (McDonald and Ho, 2002) had values 0.902 in CFI and 0.877 in TLI. Results can be seen in Table 6.

Table 6 *Model fit indices*

Index	Value

CFI	0.902
TLI	0.877
RMSEA	0.070
SRMR	0.066

From Table 7 can be calculated Normed chi-squared, which comes out as 2.35 with significance  $p=0.001$ .

Table 7  
*Normed Chi-Squared values*

$\chi^2$	145.709
Df	62
P	<0.001

Repeated tests calculations for the whole scale and individual dimensions on the extended sample brought higher reliability values in every component and also in the scale compared to calculations in the pilot measuring. The exact values can be seen in Table 8.

Table 8  
*Reliability tests values (N=275)*

Scale	Component 1	Component 2	Component 3
$\omega= 0.76$	$\omega= 0.663$	$\omega= 0.699$	$\omega= 0.824$

## Discussion

KMO over 0.7 and significant Bartlett's test suggested that reduction of variables using PCA is suitable (Rabušic et al., 2019). Principal component analysis revealed three components consisting of 13 items. This means that I had to drop one item from the model (item 14). The mentioned item 14 could have caused problems right in the context of teachers in the Czech Republic, for this occupation does not come with some explicit non-financial

perks as in some other countries (Šťastný et al., 2021; Bilbokaitė-Skianterienė & Bilbokaitė, 2018). The revealed inner structure corresponded to the expected structure based on a theoretical background and research purposes, and not even reduction of the item 14 would reduce the content. The three-dimensional model explained almost 50 % cumulative variance in the pilot measuring, which is a sufficient score in social sciences and humanities (Williams et al., 2010), and in a lot of pedagogical research even lower values further used in research are considered as suitable (Peterson, 2000; Gavora, 2011; Gibson & Dembo, 1984). Varimax rotation choice proved to be suitable for these data, and all remaining items loading its one component. Component 1 - Knowledge, Component 2 - Social image, Component 3 - Salary.

Reliability tests in the pilot testing did not obtain too high values, mainly in the first component in which McDonald's Omega was equal to 0.6. Nonetheless, values around 0.6 are declared as acceptable in humanities and social sciences and many authors use them for further work (Gavora, 2011; Menon & Azam, 2020; Klimek, 2019). The whole scale obtained Omega value over 0.7, which is already a suitable reliability value (Dunn et al., 2014). I had not wanted to loosen the tool for a lower reliability, hence extending the sample and adding teachers of the target group for further research in it helped the reliability grow significantly. Therefore, possibly, it would be even higher in another measuring if there were only teachers in the sample.

Confirmation factor analysis showed that, the three-dimensional model seems to be suitable in spite of having lower TLI (0.887) compared to recommended cut-off point, which is value 0.9 (Yu, 2002). When it comes to smaller samples, value of CFI is more eloquent, which is in this case sufficient, hence over 0.9 (Hu & Bentler, 1999). The results of this constructed model being suitable for further use and interpretation of acquiring data speak for themselves and are supported by results of other fit indices such as RMSEA and SRMR. Both of them obtain sufficient values; RMSEA below 0.08 (Hu & Bentler, 1999) and SRMR below 0.08 (Hooper et al., 2008). For this model speaks also a suitable result of normed chi-squared, which is recommended to use instead of a normed chi-squared for its lower sensitivity to size of sample (Hooper et al., 2008). Said et al. (2011) claim that, calculation of CFA reveals also construct validity of the tool. With regard to acceptable results of this analysis, this suggests that the tool is rather valid (in terms of construct validity).

## Conclusions

Even though the psychometric characteristics of this new tool are not exactly excellent, they can be considered acceptable and suitable for research. Growing sufficient reliability and verified construct validity suggest that this tool is at the moment the only one to use for measuring ascribed prestige of the teaching profession by teachers themselves, and is functional and usable in further research. This enables it to help us in the future verify some interventions of education policy and their possibly being mirrored in the teaching profession and its prestige. These research results can suggest what is necessary to change in order for the prestige of the teaching profession to grow and, as a result, be attractive for more quality applicants in the Czech education system. In the future, it might be interesting to extend the tool in one more dimension, which would examine the area of usefulness of this occupation for the society, as it represents a strong factor of the occupational prestige and is not currently included.

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# **Multicultural Practicum Groups as a Tool for Global Competence. Internationalisation at home and abroad**

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## **Abstract**

There appears to be broad support for educating critical- and ethical-thinking global citizens in higher education (Lilley, Barker & Harris, 2014). Internationalisation of education and the education of global citizens are priorities of universities. Sending students on different types of programmes to foreign universities or practicum arenas – that is, internationalisation abroad – is one strategy. In most countries this is a strategy that reaches few students. Strangely, internationalisation at home has received less attention, even though this has the potential to engage all students by offering international and intercultural learning in the home institution (Lilley, Barker & Harris, 2014).

Namibia and Norway have launched an exchange programme for student teachers (multicultural practicum groups). International student teachers have school-based practicum together with students from the home institution. This means that a few students are getting international experience by going abroad while students that stay at home get an international encounter by being placed in practicum groups with international students.

This article presents some result from the first round of exchanges. A qualitative research approach was used. The findings show that for both groups of students the cultural meeting has had an impact on their global competencies.

## Introduction

The consequences of globalisation are a challenge for teacher education. Conflicts, inequality, and poverty have fuelled international migration, which has resulted in increased ethnic and cultural diversity in schools around the world. Global interdependence is becoming more evident for most people as global migration and climate crises affect daily life. The sustainable development goals (SDGs) of the United Nations have been approved by most countries, and to meet these we must teach all learners to take a global perspective. To meet these SDGs, Norwegian education authorities launched new curricula for teacher education in 2017 and for primary and secondary schools in 2019. The new curricula focus on global issues, democracy, sustainable development and intercultural understanding as integrated components of the teaching of all subjects (<https://www.regjeringen.no/no/dokumenter/f-06-16/id2507752/>). These new curricula meet the need for competence and relevance in an increasingly globalised world. It is well-established that there is a need for global competence in teacher education. However, little is done to measure it (Sokal and Parmigiani, 2022). International student mobility is being encouraged in all higher education programmes. The Norwegian Ministry of Education is aiming for 50 % of students to spend part of their education abroad. International exchange programmes are an efficient means to increase the global perspectives and intercultural competence of students (i.e., their global competence). These programmes are potentially transformative in nature as participants can gain a better understanding of, and sensitivity to, differences by living in another country and developing a more ethnocentric perspective (Bennett, 2004; Mezirow 1981, 1997). First-hand knowledge and the experience of otherness are critical to the development of global competence (Cushner, 2007; Stachowski and Sparks, 2007; Walters, Garii and Walters, 2009). Research shows that student teachers who take part in international exchange or international practicum programmes may develop a more sophisticated worldview, become more interested in exploring other cultures, increase their openness and tolerance towards other cultures and gain a greater understanding of global issues (Chieffo & Griffiths, 2004; DeGraaf, Slager, Larsen and Ditta, 2013; Maynes, Allison, and Julien-Schultz, 2012). Furthermore, personal benefits, such as increased independence, maturity and confidence are reported. For student teachers that take part in international programmes abroad these personal developments may improve their abilities as teachers (Nunan, 2006; Tangen, Henderson, Alford, Hepple, Alawi, Shaari, and Alwi, 2017; Wiggins, Follo and Eberly, 2007; Wilson 1993).

However, in Norway few student teachers take part in international exchange programmes. Most graduate without the requisite global competencies to ensure that they are qualified to teach in the increasingly globalised classroom.

In this article we look at two groups of student teachers. One group had their international practicum abroad and one had their international experience at home. The latter group gained their international experience by working in practicum groups with foreign students. We ask what the impact of this encounter was on their global awareness and intercultural competence, that is, their global competence. We look at how this has impacted on their professional and personal life.

### **Global Competence and Global Education in Teacher Education**

The concept of global competence is defined by the Organisation for Economic Co-operation and Development (OECD) as:

*Global competence is a multidimensional capacity. Globally competent individuals can examine local, global, and intercultural issues, understand, and appreciate different perspectives and world views, interact successfully and respectfully with others, and take responsible action toward sustainability and collective well-being. (OECD, 2018, p 4)*

This definition outlines four target dimensions:

1. the capacity to examine issues and situations of local, global, and cultural significance.
2. the capacity to understand and appreciate different perspectives and world views.
3. the ability to establish positive interactions with people of different genders and national, ethnic, religious, social, or cultural backgrounds; and
4. the capacity and disposition to take constructive action toward sustainable development and collective well-being.

The four dimensions of global competence are supported by four inseparable factors: knowledge, skills, attitudes, and values. (OECD, 2018). Parmigiani, Jones, Kunnari and Nicchia (2022) interpreted the OECD's concept as:

*global competence is not just about knowledge and skills, but about the mobilization of these for active engagement, which is appropriate for the diverse societies in which we live and for the sustainable future of the world.*

The OECD definition of global competence is one definition among many that try to capture the same challenge. There are many other concepts used to describe the global and intercultural competence that is necessary in a

globalised world. Cushner and Mahon (2009) use the concept 'worldmindness' to describe a reduction in ethnocentrism and greater sophistication in thinking about others. The concept 'global-minded' is used by Walters et al. (2009) to describe how students become more involved in international activities, have more friends in other countries and are more interested in global issues. Keese and O'Brian (2011) and Merryfield (2008) use the term 'global awareness' and define this as including knowledge, interest and engagement in global issues, local/global connections, and diverse cultures. UNESCO launched the concept 'global citizenship' to describe the competence required to analyse global issues.

How should teacher education institutions act to prepare teachers for global competence? UNESCO uses the concept 'global education' to describe an education that includes both a knowledge dimension and a perspective dimension. Based on the UNESCO definition, Becker (1982) defined global education as an effort to help individual learners see the world as a single global system and see themselves as participants in that system. A school that focuses on global education prepares learners to have a worldview for international understanding. Becker emphasised that global education incorporates into the curriculum and educational experiences of each student a knowledge of, and empathy for, the different cultures of a nation and of the world. Escobido (2017) added to this when he defined a global teacher as one that is 'a competent teacher who is armed with enough skills, appropriate attitude and universal values to teach ... and thinks and acts both locally and globally with worldwide perspectives, right in the communities where he or she is situated'. Global education includes studying human values and beliefs, global systems, problems, history, cross-cultural interaction, and understanding (Merryfield, 2008). O'Tool (2006) argued that to prepare student teachers to work in a multicultural context in an increasingly globalised world, they must be taught about both developmental issues and multicultural contexts. That means that economic developmental education and multicultural education are equally important. To educate global, competent teachers, teacher education must therefore incorporate both global and justice dimensions within that education (O'Tool, 2006, p. 99). Lilley, Baker, and Harris (2014) claim that education institutions must facilitate change by exposing the student teachers to intercultural encounters, which might manifest change, for instance, by broadening perspectives, or widening horizons. In their study, one of the main findings was the importance of interpersonal encounters with students from other cultures. This made them more open, aware, and receptive to the perspective of others. 'The encounters made them reflect on their situation, question their assumptions, and consider alternative points of view' (Lilley, Baker, and

Harris, 2014 p.10). Consequently, it is possible to argue that the interpersonal meetings among students from different cultures are important means to help the student teachers become globally competent.

### **Theories of Perspective Transformation**

Theoretically, this research is motivated by Bennett's developmental model of intercultural sensitivity. This theory concentrates on the individual's growth, which leads to improved understanding and sensitivity to differences (Bennett 2004). Bennett's model constitutes a development of orientations toward cultural difference from ethnocentric to ethnorelative stages. Three ethnocentric orientations – where one's culture is experienced as central to reality (denial, defence, minimisation) – and three ethnorelative orientations – where one's culture is experienced in the context of other cultures (acceptance, adaptation, integration) – are identified. The stage of adaptation is of special relevance as it is the goal of intercultural training programs. People in this stage can, according to Bennett (2004,70), 'engage in empathy – the ability to take perspective or shift frame of reference vis-a-vis other cultures.' A shortcoming of Bennett's model is that it does not explain how the transformation takes place, unlike that of Mezirow (1981), for example.

The transformative learning theory (Mezirow, 1981, 1997), describes the process that must take place to achieve perspective transformation. According to this theory, first-hand knowledge of other cultures is fundamental for perspective transformation that may lead to global awareness and intercultural sensitivity. Contact with international 'others' is viewed as a powerful way to achieve perspective transformation that may contribute to enhanced global understanding (Lough and Bosly, 2012).

Experiences of other cultures are important for beginning a process of perspective transformation, and Taylor (1994) emphasises the important role of experiencing culture shock as a catalyst for perspective transformation that may lead to intercultural sensitivity. Furthermore, the experience of otherness is an important aspect of becoming more interculturally sensitive (Abdallah-Preteuille 2006). This is the reason international practicum programs are potentially transformative in nature. Living and working with people from different cultures challenges the perception of oneself, of others, and of the home culture and country.

### **The Programme: Multicultural Practicum Groups in Teacher Education**

Our institution has run an international practicum in Namibia for more than 20 years. Norwegian student teachers have completed their practicum in Namibian schools during a stay of approximately 3 months. This programme has formed part of a cooperation between the Norwegian institution, the University of Namibia, and the Ministry of Education in Namibia. 8-12 students participate in this programme each year, which is a small part of the student group. Those participating in this programme reported that it was a valuable experience, and the exposure to a foreign culture has made most of them what we may call 'globally competent' (Klein and Wikan, 2019, Wikan and Klein, 2017).

Despite the good results of this programme, there are shortcomings. One is obviously the small number of Norwegian student teachers taking part in the programme; another is the lack of parity, as no Namibian student teachers get the opportunity to travel to Norway and gain international experience working in Norwegian schools. Our programme might therefore be accused of postcolonialism as we use the Namibian context to enhance the quality of our own teacher education.

To meet both these shortcomings we launched a new programme: multicultural practicum groups in teacher education (MUPIT). This programme was delivered jointly by staff at the Faculty of Education, the University of Namibia and the Faculty of Education at the Inland University of Applied Sciences, Norway. The programme had Norwegian student teachers travelling to Namibia for a 5-week programme and Namibian student teachers travelling to Norway for a 5-week programme. The crux of the programme was having the two groups of students conducting practicum in mixed practicum groups in primary and secondary schools. An essential component of the programme was the buddy system, which was meant to enhance global and intercultural learning for both groups of students through peer reflection and joint supervision. At the end of the programme staff and students from both countries held a joint workshop.

The students who were going abroad were briefed about the country, culture, and school system by staff at both institutions before and after arrival. The Namibian and Norwegian staff also held briefing sessions with their student teachers who were to act as the foreign students' peers.

## **Methodology**

Researchers from both institutions jointly developed a trailing research design that was used to monitor the effects of the programme. In this presentation we will report findings from a pilot investigation of the first year of the project. We used qualitative methods, based on three interview guides. One for before the practicums, one for after the practicums and one for a focus group discussion at the end of the programme with local and foreign students in Norway and Namibia. The data used in this article is based on information from the Namibian students that came to Norway and the Norwegian students that had their practicum in Norway together with the Namibian student teachers.

At the focus group the students were divided into smaller groups before the plenary. They were asked to reflect upon what they had learnt at both a professional and personal level. They were also asked to reflect upon whether being part of a multicultural practicum group had added to global competence, operationalised as intercultural competence and global awareness. The data from the focus group discussions were coded according to the themes and issues that emerged and were analysed using inductive open coding.

As this was a pilot, there were a limited number of students taking part in the programme. In Norway there were two incoming students and eight home students.

## **Findings**

The findings are presented according to two categories: professional level and personal level. Within these two categories, two major themes derived from both theory and data are intercultural competence and global awareness. Intercultural competence involves becoming aware of one's own culture, including school culture, facing one's stereotypes of others, and consequently becoming more open to other perspectives. Global awareness involves gaining knowledge about the world outside one's own country. Structuring the findings into these categories is one way of presenting the findings. However, it must be stressed that the categories are intertwined.

### *Professional level*

'Professional level' refers to the education system, schools, teaching, and classroom management. Both student groups stated that the programme gave

them a new and fresh perspective on their own education system and teaching as a profession.

The Namibian students observed that the Norwegian school was learner-centred and focused on creating a good relationship between teachers and learners and between the learners themselves. The lack of hierarchy in Norwegian schools was also something that the Namibian students observed. Another thing they noted was the use of groupwork. In Namibian schools this is not used at all. They also found the lack of discipline in Norwegian schools strange. The teachers and the learners seemed to be on the same level and the teachers 'cared for all learners. The learner's freedom to behave and dress as they like surprised the Namibian student teachers. In Namibian schools there is strict discipline, teacher-led education, and school uniforms. Therefore, it is not surprising that they found the lack of discipline, dress code and non-authoritative teaching style strange to witness.

*no clothes policy, freedom in clothing, green hair, polish on nails, lot of time to play outside, they use a lot of apps (NAM)*

Inclusive education is a legal right for Norwegian learners. This means, among other things, that all learners have a right to education and the right to be taught at their level of ability. Special schools were abolished long ago in Norway. For the Namibian students this was something they had not seen in Namibia. Although new to them, this was one of the things they learnt existed and stated that they would like to see in Namibia.

*inclusive teaching and anti-bullying, openness to express their cultures and religions, accommodation for pupils with different beliefs and abilities was good to see (NAM)*

In Norway, cooperation is an ideal in the schools, both between teachers and between school and home. The close cooperation among the teachers, and the fact that teachers formed teams surprised the Namibian students. They came from a culture where the teacher had sole responsibility and was in total control of their own teaching and own class, provided they followed the national curriculum.

*School management, how teachers collaborate, planning together - groups of 4<sup>th</sup> grade teachers, working with small groups of learners (NAM)*

School-home cooperation is very important in Norway. The parents have a say in what is happening in the school. There are many points of contact

between parent, teacher, and learner. As this is not so important in Namibia, the Namibian students commented on this and wondered why this was considered so important. In Namibian culture, the parents see the school as responsible for the education of their child. The parent's role is to teach them other important life skills. Therefore, even though there is a yearly meeting for the parents, this is really to disseminate information from the school and not a discussion forum.

The high level of access to learning technology was commented on by the Namibian students. The education authorities have, for a long time, prioritised all types of ICT technology in the classroom: smart boards, personal computers, and an iPad for every learner. For the Namibian students this was something they admired.

*In the classroom there were iPads for every learner as well as projectors for use by the teachers, who use applications; learners do tests on iPads, (NAM)*

Namibia has eight national languages, and English is the official language. The language policy states that the learners should have their mother tongue as the language of instruction during the first grades. From grade 4, English is the language of instruction. Coming to Norway gave the Namibians a lesson in language policy. They did find it strange that Norwegian was taught in Norwegian schools. This is taken for granted in Norway and it came as a big surprise for the Norwegian students that a language other than the mother tongue was the language of instruction in any country's schools.

The number of learners with immigrant backgrounds surprised the Namibian student teachers. As in many other European schools, globalisation and international migration is visible in the classroom. Some 20 years ago there were few immigrant learners in Norway, but now 20 % of the Norwegian population has an immigrant background. This is one reason Norwegian teachers need a more global perspective and better intercultural competence.

As the above presentation of findings shows, the Namibian students appreciated some of the things they observed in the Norwegian school, but others they did not. They admired the access to teaching technology and other learning material. They also admired the learner-centred teaching style and inclusive education. Other things like the lack of discipline they did not find worth taking back to Namibia and incorporating in their own teaching. However, they all saw that teaching and education could be conducted differently to that in Namibia and still work.

The Norwegian students were placed in the position of gate-openers to the Norwegian system of education and teaching. They were constantly asked by the foreign students to explain what was expected, what was going on and, for instance, the rationale behind their teaching plans. Some students said that being put in this situation had improved their teaching.

*It improved my own teaching plans that I had to explain to the foreign students. I think being part of this programme has helped me becoming a better teacher. All the questions forced me to reflect upon the choices I made when making a teaching plan (NO).*

Establishing mixed practicum groups, and thereby bringing these two student groups together, helped the Norwegian student teachers to see their own education from a comparative perspective. For instance, two Norwegian students said:

*I learnt that in their school everything is about subject learning, no room for play. And learners must pass to come to the next grade. If they fail, they must go to summer school. The learners are getting marks and teaching is less learner-centred (NO).*

*The Namibian school has mostly theoretical subjects and less sport, handicraft, and music. The teachers work less to prepare the learners to cooperate and less on their social development than we do in the Norwegian schools (NO).*

Learning about Namibian schools and classroom culture has made the Norwegian students appreciate their own system. But it has also made them aware that in other countries things are different, and that is valuable knowledge for their future work in a multicultural classroom.

*By working with students from abroad I am now more aware of the differences in schooling and culture and will think about that when I meet learners from other countries in my classroom. I have become more positive towards the Norwegian school system (NO).*

#### *Personal level*

In addition to gaining insight into a different school system, being part of this project gave young people the opportunity to work and live together, which enhanced their global knowledge. The Norwegian students for instance, were surprised that family economy had a bearing on which school a child could attend; that better schools had higher school fees and were not

accessible to learners from poor families. There are no school fees in Norway and most learners go to their nearest school, which is a public school.

Learning about life in a poor country like Namibia gave the Norwegian students perspective on their own lives. They became aware of the privileged society they live in. They also learnt that there are different socioeconomic groups in Namibia. They have, for instance, learnt that there are many rich people in a poor country and that not all Namibians are poor.

*I have learnt that not all Africans are poor. Poverty in Namibia is less of a problem than I had envisaged. I thought everyone was poor, but I found out that many middle-class people live similar lives to ours.*

Meeting up with fellow student teachers like this broadened the Norwegian students' mindset; it has strengthened their global perspectives:

*I think being part of a multicultural practicum group has strengthened my global perspectives. I have got more global knowledge – I have learnt to see things in a more global context. I have learnt that some things are very Norwegian because I had to explain it to the others (NO)*

The Namibian students got many surprises during their five weeks in Norway. They found it interesting that cars stop when people try to cross the road. Other things they found strange, for instance, was that shops are closed on Sundays, there are strict laws on drinking alcohol, and there are toll roads. It is true that in Norway society is better regulated than in Namibia and the authorities can fine you if you break the law. In Namibia alcohol is cheap and excessive drinking is a problem.

There were many benefits reported on a personal level by this programme for both student groups. Before they met, they did not have much information about the other group. They not only found differences, but also similarities, as we can see from this quotation:

*There are surprisingly many similarities, but there are also differences, for instance they had not heard about Spotify and Snap chat ... we have the same humour and the same values, that is surprising.*

'I have become aware of Norwegian culture' one of the Norwegian students said. The programme was organised so that the Norwegian and Namibian students were together most of the time. That meant, for instance, that the Norwegian students had to answer many questions about why and how they did certain things in certain ways. That was a revelation to the Norwegian students – things that they took for granted were not necessarily so.

It is common to have a stereotypical understanding of others before you meet. By being part of the multicultural practicum groups, and getting to know each other as people, this has changed:

*My stereotypes have been challenged. I have learnt a lot about the culture and life in Namibia. That has changed my perspectives. Before, I thought all Africans were like this. I had a stereotype approach to Africa. That has changed because of my personal relationship with Ben (NO).*

This project made the students more broadminded towards other cultures and more interested in getting to know other cultures:

*I have become more interested to learn about other countries and I see Norway in perspective. I am surprised at how similarly we view the world. I thought it would be more different. I have learnt the value of getting input from other countries. I did not think I was that interested in other countries, but I realised that was due to the multicultural practicum groups. After being a part of this programme, I would like to go on exchange abroad. Before I was not so interested in that. (Summary from several Norwegian students).*

For the Norwegian students, this programme also raised their confidence in speaking English.

*My English has improved. I was a bit terrified the first few days, but gradually I stopped thinking about it. The social interaction reduced the language barrier. It was good to meet on campus the day before – to get to know one another and put faces to names.*

The Namibians also expressed how participation in this multicultural practicum programme had raised their personal confidence:

*I learnt how to interact with different people, I have become more openminded as a teacher to learners of different cultures and beliefs ... I learnt more self-esteem and how to connect to new people ..., so I learnt that going somewhere you must pick up on different norms (NAM)*

The presentation above of some of the findings demonstrates the importance of interpersonal encounters with students from other cultures. As the quotations show, meeting with student teachers from another culture made the participants more open, aware, and receptive to the perspectives of others and, as Lilley, Baker, and Harris (2014) also found, helped them to get a new viewpoint.

### **Discussion of Findings**

Teacher education institutions are under pressure from education authorities to educate teachers with global competence. Many of these institutions in Europe have different types of international exchange programmes as one way of meeting this challenge. This is based on both theoretical and empirical research that argues that international encounters with other cultures, and meeting otherness is an efficient method to help

student teachers gain global competence (Bennet, 2002; Cushner ,2007; Maynes et.al, 2012; Taylor, 1994).

Few studies have looked at the effect of arranging this intercultural encounter at home. One exception is Tangen et. al (2017) which reports on a buddy program in Malaysia between Australian student teachers and local Malaysian student teachers. They found this to be a good programme for those students that did not have the opportunity to travel, and the outcome was positive for both student groups.

Our findings are in accordance with Tangen et al. (2017). We found that by observing a different school system, and by teaching in another context, most students seemed to have gained new perspectives of their professional role and pedagogic practices. Student teachers in both groups saw their own education system from a comparative perspective. This made the Namibian students question some of the practices they had taken for granted, while they also observed some things they did not want to pick up – such as the lack of discipline – in Norwegian classrooms. The Norwegian student teachers also learnt that the Norwegian educational system and teaching methods are not universal. However, none of them gave a critical reflection on the Norwegian system. In contrast, learning about the Namibian education system and teaching style strengthened their belief in their own system. When applying for the programme, the Namibian students said that they were interested in learning about Norwegian schools and teaching. The Norwegian students did not say that they were interested in learning about the Namibian system.

One interesting outcome of this programme was that the Norwegian students claimed that they improved their lesson plans and teaching. By being constantly asked to explain what they were planning to do in the classroom, and why, they were forced to question their own plans. Doing this improved their work as teachers.

International practicum has the potential to transform the students' perspective because it puts the student teachers in an unfamiliar cultural and educational context. The mixed practicum groups at schools, as well as the fact that the student teachers socialised in their free time, had an impact on both student groups. We saw that some became more at ease in diverse cultural contexts and questioned cultural stereotypes. We also saw that encountering fellow students from another culture and country helped them to broaden their world view by getting first-hand factual knowledge about a foreign country. Therefore, this programme enhanced the knowledge and understanding – and consequently the global awareness – of all the students that participated.

Furthermore, by establishing positive interaction with young fellow student teachers, they discovered many similarities, and some claimed that

they got rid of some stereotypes. In addition, some students mentioned that this new knowledge had changed their attitudes, and that in the future they would be more open and interested in learning about other cultures and countries. Finally, this programme helped some students to understand that their norms and values are a result of their culture. We see this as an important step to becoming interculturally competent.

For some students, increased self-esteem was another effect of this programme. The Norwegian students mentioned that they had become better at speaking English. The Namibian students that stayed in Norway had increased their ability to connect with new people. Personal outcomes such as increased independence, maturity and confidence were reported. For student teachers taking part in international programmes abroad, these personal developments might strengthen their abilities as teachers (Nunan, 2006).

There are limitations to our findings. They are based on a small number of student teachers, so care should be taken to not draw firm conclusions. Nevertheless, from our findings we can see that the student teachers that took part reported that they had gained new knowledge and insight about themselves and others, which is an important first step toward transforming oneself and starting on the difficult road to becoming a teacher with global competence.

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# The Italian Repertoire of Tutors for the Professional Valorisation and Retainment of Small School

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## Abstract

In this work we present the theoretical basis and the goals of research which have laid the foundations for the development of the Italian Repertoire of Tutors of Small School and the validation methodology, necessary to understand its value and governance models based on collaboration with the territories. The repertoire responds to the need for professional valorisation of teachers and school principals of small schools and to trigger processes of retainment and shadowing of school staff operating in small and isolated school sites across the country.

Keywords: small schools; repertoire of tutors; technological development; validation.

The work is the result of the scientific collaboration between the authors. In particular, Giuseppina Rita Jose Mangione, Senior INDIRE Researcher, is the author of the paragraphs: "Professional valorisation and retainment in small school contexts", "Small schools Tutor role: profile and competencies", "Methodology of validation and target dimensions", "What is the perceived value of the Repertoire of Professional Skills for innovation in the small school?", "What operational scenarios for functioning and what forms of governance as a Network?" and "Conclusions and perspectives". Beatrice Miotti, INDIRE Technologist, is the author of the paragraph "Scenarios and the implementation of the Repertoire of Professionalism for Innovation in Small Schools".

### Professional valorisation and *retainment* in small school contexts

Italy's socio-economic statistics certify the existence of profound territorial inequalities. In places known internationally as “the places left behind” whose communities show signs of a marked social distress, strengthening the role of school, often the last outpost of sociality, must be a primary goal (Mangione et al, 2021). (Mangione et al, 2021).

Territorial inequality, and ensuing economic impoverishment, mean that alongside or instead of 'typical' urban dimensions of the collective imagination, 'minor' realities emerge, located in mountains, on islands, in inland and remote areas or on the country's urban outskirts. In these geographies, small schools, often a solitary cultural stronghold, are required to ensure continuity of the learning route, also under situations of remoteness and environmental difficulties and the management of multi-grade classrooms (Mangione and Cannella, 2021) (Fig. 1).

This maximises opportunities made available precisely by contextual characteristics, such as larger or recoverable spaces, educational landscape, educating community, reduced dimensions for curricular experimentation also in multi-age classes (Mangione and Garzia 2021), proximity and cooperation between networks for a distributed service capable of supporting open and heterogeneous forms of classroom (Mangione and Cannella, 2022; Mangione and Pieri, 2021; Mangione, Parigi & Iommi 2022).





Figure 1. Small school scenarios in Italy - INDIRE Archive.

It is common in small rural schools that a few teachers are called upon to cover all subjects as well as pre-school and after-school interventions, curtailing opportunities for the reciprocal exchange of ideas, to experiment with innovative teaching or to delve deeper into their didactics, and hence, to work for different levels of settings and/or multi-grade configurations.

Teachers' condition of 'aloneness' does not allow them to discuss with peers on the planning nor to benefit from co-presences aimed to improve individualised or remedial pathways. Their displacement in schools on small islands or in mountains can also impair contacts with school principals( in many cases "acting headmasters" and therefore unable to provide regular on-site presence in the smallest and often poorly accessible sites) as well as with pedagogical instructors and consultants (often convened in the most central sites of the school and not easily reached by teachers located in the most deprived schools), and affecting the well-known "vocational dispersion" phenomenon that characterises these contexts. From the student perspective, such a reduced number of teachers, along with teacher retraining also in the form of internships such as peer tutoring or job shadowing, negatively affect the possibility for them to be influenced by different educational pedagogies or to choose different learning styles and modalities (Cannella, Garzia, Mangione & Repetto, 2020).

The vocational dispersion of teachers is neither conducive to the strengthening of skills on the effective management of multi-grade classrooms and different forms of networked teaching in classes and schools, nor to the creation of a "quality school" designed for disadvantaged areas to avoid depopulation.

With the aim of contributing, through service research activities, to the improvement of educational offering and of teaching and learning

experiences in small schools characterised by isolation, remoteness, smallness (Heeralal, 2014), the Italian National Institute of Documentation, Innovation, and Educational Research (INDIRE), within the project “Small Schools” (PON “Per la Scuola” 2014-2020 -10. 1.8.A1-FSEPON-INDIRE-2017-1) proposes a Repertoire of Tutors of Small Schools to respond to the need for professional valorisation of teachers and school principals of small schools and to trigger processes of retainment and shadowing of school staff operating in small and isolated school sites across the country.

The Repertoire is part of that strand of research that looks at the need to incentivize and retain highly qualified teachers (Barrett et al 2015; Azano, Stewart, 2016) in fragile territories and, at the same time, at the importance of tutoring and mentoring processes for the initiation of local growth paths such that innovation teams can be created to be capable of intervening in quality educational offering and continuing training for teachers (Garzia, Mangione and Tancredi, 2021). The rationale behind this tool is based on a new vision of schooling: a school of proximity, a school that is open and boundless, a school that through an alliance with the territory (sometimes formalised through Educational Pacts) repurposes its offering and strengthens services and resources (Mangione and Cannella, 2022). To substantiate this vision of school promoted by INDIRE's Small Schools precisely, the beneficiaries of the Repertoire, that is, individuals who will be able to have access to and apply for the local interventions of Tutors available for operating in places where the small schools are based, are not only school institutes, but also municipalities, third sector, associations, and cultural organisations in the area that, as part of the alliance with the school, can support and partake in training, innovation and improvement actions.

### **Small schools Tutor role: profile and competencies**

To identify the Tutor of Small Schools and his skills, the professional standards of the teachers used in the MIUR actions relating to the Italian National Training Plan (PNF) were taken as a reference. Basing on the MIUR dossier "Professional development and quality of in-service training" of 16 April 2018, the candidate to the role of Small Schools Tutor must have certain prerequisites relating to 4 large areas (Area A - Transfer of skills, Area B - Didactics, Area C - Organization, Area D - Care of the profession) structured in indicators and descriptive rubrics of behavior "in the field" (Garzia, Mangione and Tancredi, 2021).

The indicators, already provided to the teachers are related to the dynamics of classroom management, the communication styles, the ability to build proactive relationships with students, the production and didactic

documentation, the dialogue with a cultural and social reality in movement. They have been analyzed carefully and then been chosen with respect to the interventions hypothesized for innovation in the small school. Each indicator, which feeds an area of expertise within a specific standard, is connected to a "mastery graduation" to which "evidence" must correspond for a number proportional to the size of the reference area. The candidate will have to position himself with respect to the degree of perceived competence and indicate or describe or document those experiences that he / she considers to be significantly representative of his / her competence.

Focusing on a first profile has allowed the INDIRE working group to prepare the construction of action scenarios and territorial governance hypotheses of the Repertoire capable of guaranteeing a management oriented towards improving schooling in mountain territories, islands, and internal areas.

### **Scenarios and the implementation of the Repertoire of Professionalism for Innovation in Small Schools**

Research on scenario design or scenario-based development orienting (Manzini and Jégou, 2006) represents a strategic element for educational research precisely because "design takes place in real contexts, through composite design teams, in an iterative way and oriented towards the dynamism of the process" (Limone & Pace, 2016 p. 110). Narrative-based scenario design (Rasmussen, 2005), also used in the context of innovation processes and idea generation for change and defined as innovation-oriented foresight (Gaßner & Steinmüller, 2018), has led to the implementation of the Repertoire of Small Schools.

The Repertoire has been implemented in conjunction with the theoretical and regulatory framework illustrated above, with the aim of facilitating the exchange of information and contact between two different figures: the Candidate for the function of tutor and the Service Requester, i.e., the person who needs the support of an expert to conduct certain activities. The platform has actually been implemented in such a way as to guarantee a certain flexibility both in the publication of the specific notices that can be customised according to the peculiarities of the figures required, both with respect to the type of figure and to the timing of the opening of the time window related to the application, as well as to the required skills profiles.

But the Repertoire is not only an application platform as it is an environment to follow the teacher or manager who has proposed himself as a small school mentor throughout his tenure in this role. It therefore also acts as a showcase of one's activities and curriculum, and as a collector of the

documentation necessary to illustrate what has been done at the request of the Service Requester. The curriculum and skills profile required of the tutor must also be updated every three years, under penalty of exclusion from the *Repertoire*. In addition to the frontend part, developed according to Public Administration standards, a backend was developed for the management of notices, the monitoring of applications, and their evaluation.

Since the activities to be performed in the platform require user profiling and user registration in the environment, to ensure compliance with privacy and data processing regulations when accessing public administration functions, it was decided to use the public digital identity system (SPID) in Italy. This procedure, although it does not allow the system to profile the user with respect to his or her social role (company, teacher, manager, etc.) so there are obviously no complete personal data records, protects the user by being protected and secure, and also INDIRE since it returns a verified digital identity, limiting the risks of false users or spam and allowing access to the *Repertoire* to be tracked.

Lastly, the *Repertoire* represents an important database whose fields, anonymised and processed with business intelligence applications, can also guide stakeholders and decision-makers by pointing out any critical situations with respect to the activities conducted, or to promote situations of excellence to be shared as good practices also with the entire educational community.

Going into more detail on the functionalities implemented in the *Repertoire* and remaining within the scope of what was requested for the implementation of the notice concerning Tutors for Small Schools, four types of actors and three work phases are identified: Candidates who submit an application through the web platform answering to the public selection notice as Small School Tutors; Evaluators who check the applications and approve or reject them; Tutors who are Candidates whose application has been approved and at last Service Requesters who are school principals or company leaders that need Small School Tutors for activities like training, best practices and so on.

In addition to these four profiles, the Organisation staff has the task of setting up the advertisement including the prerequisites required of candidates, entering the competencies format with a five-point Likert scale, the time for the advertisement to open, and then supervising the progress of the system and the return of data via graphs and infographics.

The process starts with the drafting of the selection notice for Small School Tutors and its publication on Organisation website. At the same time the staff creates a position in the *Repertoire* and the application process is opened.

People can log in to the website with SPID credentials (as mentioned before an Italian standard for secure log in) and complete the application wizard which guides users in the insert of all the information required by the notice (Figure 2).

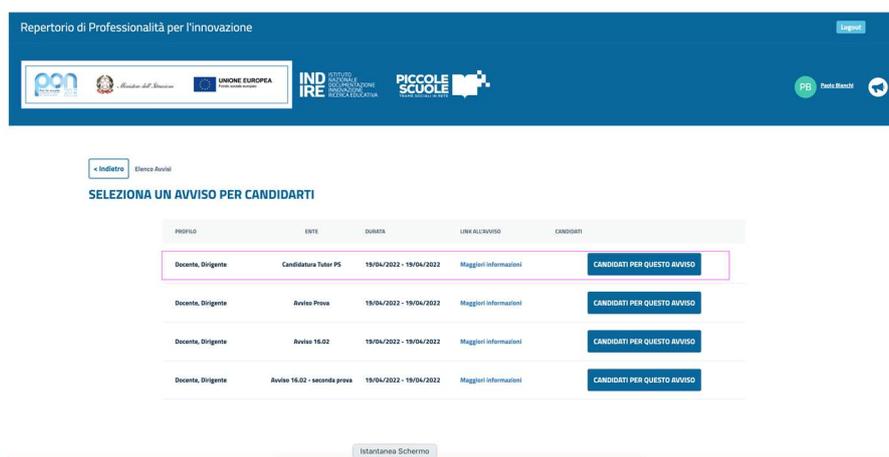


Figure 2. Application form.

After having completed the personal information form, users must select the role, as teacher or headteacher, they want to apply for, then choose the cities where they can give assistance, insert their curriculum, and confirm the prerequisite of three years' experience in small schools.

Then they must complete the competences' form which is an auto-evaluating process based on indicators developed by the project team according to a Likert scale in five points. In the end they can review the application form and submit it (Figure 3). The candidates can log in again to the Repertoire to review their application or check the evaluation process (Figure 4), but they cannot modify their submission.

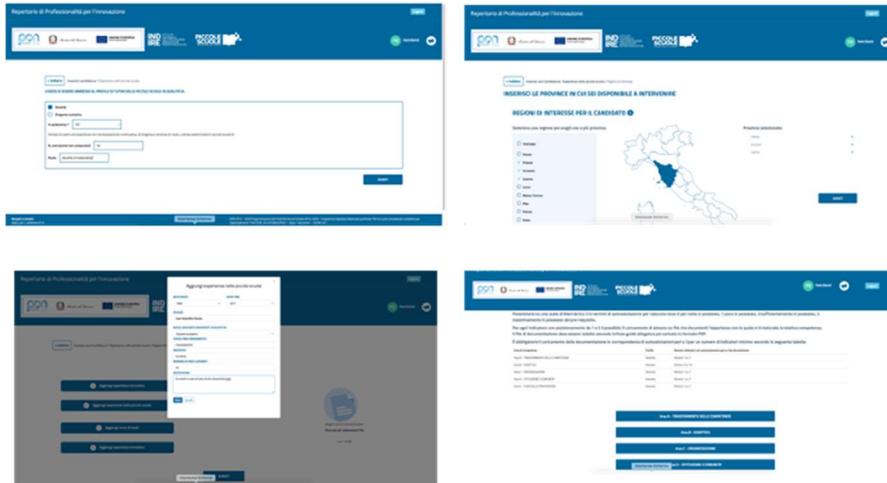


Figure 3. The wizard application.

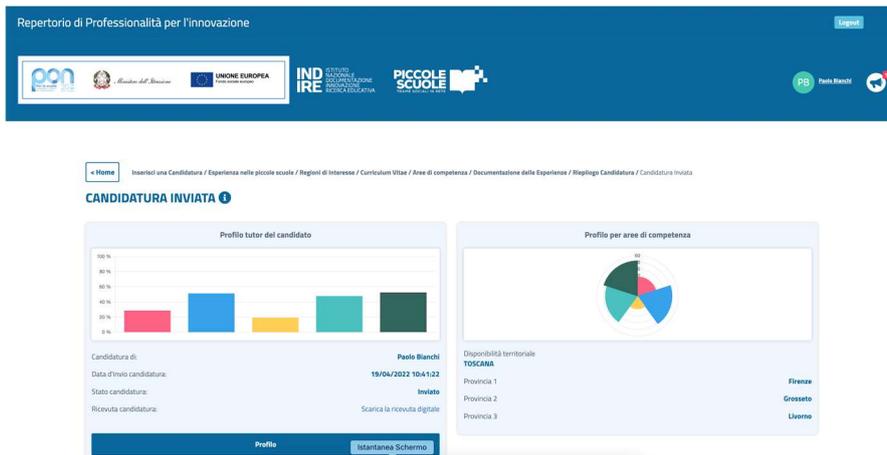


Figure 4. Candidates can see a summary of the information they have entered, followed by a graph of their competences.

At the closing of the call the Evaluators, assigned to each application according to a random algorithm, start the check process. The system can manage dubious situations which require manual intervention such as incomplete or wrong data.

If applications are approved, Candidates can enter the Repertoire in the role of Tutor (Figure 5) and can make themselves available for hire by Service Requesters, setting their state to available and setting the timeslot of days they have available for hiring.

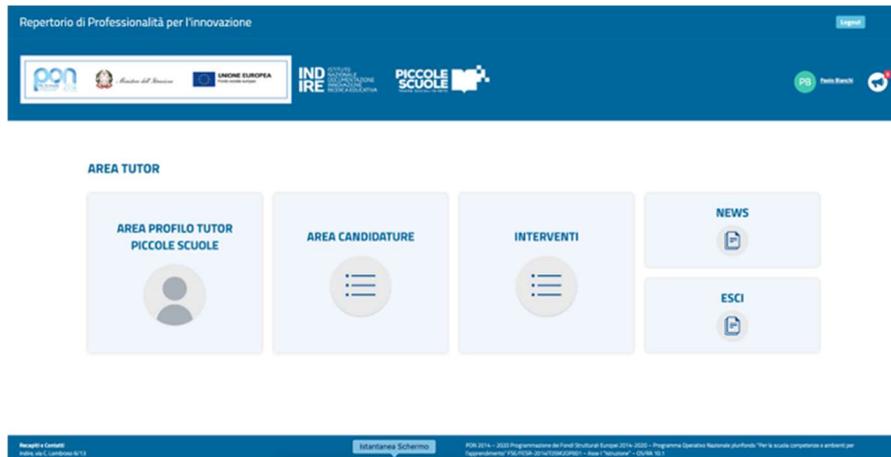


Figure 5. Tutor's homepage.

At this point of the process the system can be open to Service Requesters. They can log into the Repertoire via SPID credentials, confirm their personal data, and add information about their organization or company. Because the purpose of the Repertoire is to connect people, Service Requesters can select tutors based on their competences profile, their regional area, and previous experiences on the Repertoire, too.

In Figure 6 the list of all tutors that have been approved and are currently available for a particular notice is shown. A Service Requester can see the tutors' competence levels in the areas indicated in the application phase or as updated by tutors as they acquire skills. Service Requesters can ask tutors for their availability by entering a reason and the dates of the assignment.

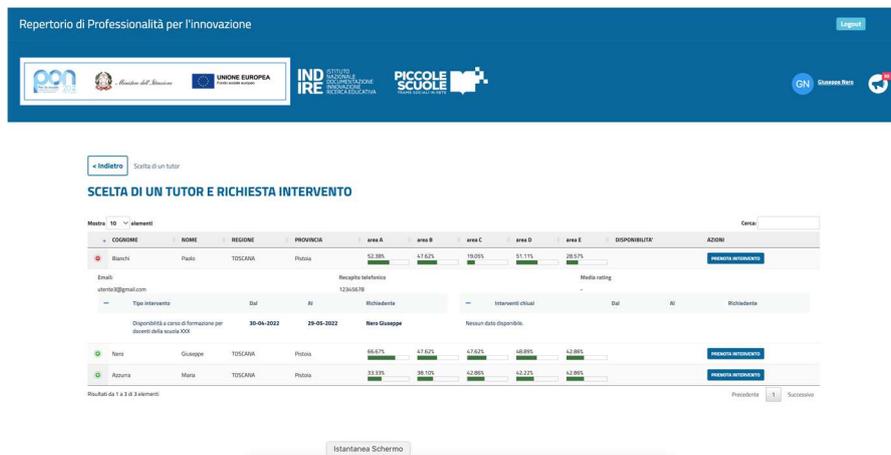


Figure 6. Tutor selection page.

Next comes a handshaking procedure which connects the two: the Service Requester asks whether the tutor is available.

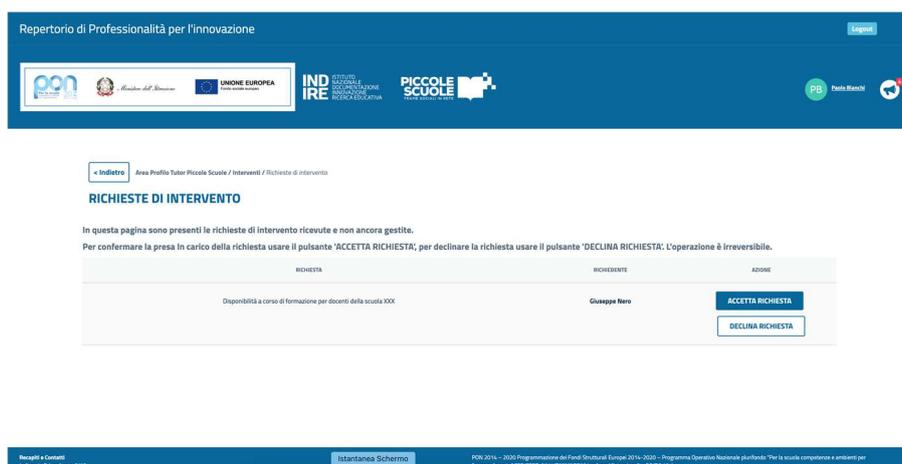


Figure 7. Tutor interface: where he/she can see service requests and accept or refuse them.

The tutor can accept or refuse to be connected with the Service Requester (Figure 7). If the tutor accepts, they can share their emails to start a collaboration.

When the activities are over, the tutor and the Service Requester can click on “activities completed” and leave feedback and upload documents (Figure 8 and Figure 9).

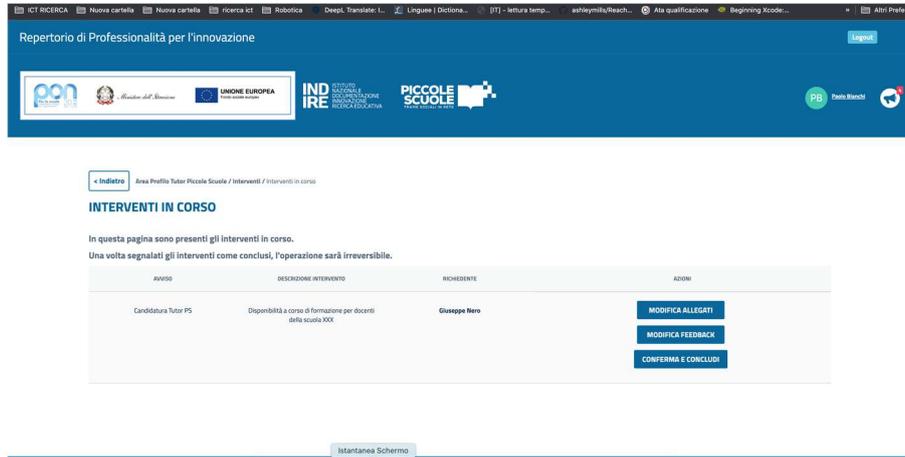


Figure 8. Tutor interface where to upload documents and to end the relationship.

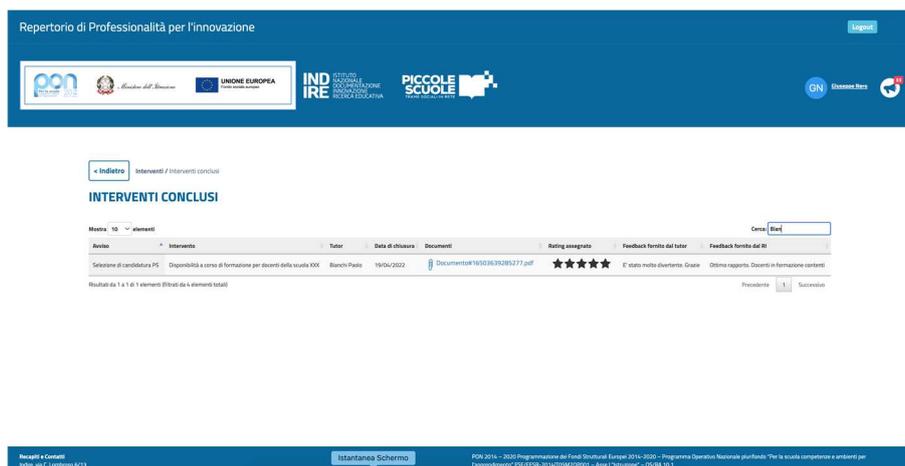


Figure 9. Service Requester's interface: he/she can upload documents and leave comments and feedback.

### Methodology of validation and target dimensions

The concept behind the Repertoire and the implementation of possible scenarios, which led to the development of the Repertoire environment, were subject to scientific validation.

The research methodology applied for the initial validation of both concept and scenarios, as well as of areas of expertise in the small school tutor's profile, makes use of insights and tools from interpretive research.

More specifically, the choice falls on the technique called "spoken reflection" (Trincherò, 2004), an in-depth interview redesigned to include what the involved participants perceived with respect to the Repertoire, but especially to intercept innovative visions for its most appropriate use.

The researchers encouraged teachers, school managers and representatives of the USR to obtain reflections about the Repertoire and some dimensions of analysis, taking care to accompany the reasons that give rise to opinions, reflections, evaluations. The main technique is that of thinking aloud, prompting reflection aloud to better understand the arguments and hypotheses of the Repertoire. The results of the interviews are reported in the following paragraphs.

### **What is the perceived value of the Repertoire of Professional Skills for innovation in the small school?**

Spoken reflection (articulated in delivery of the stimulus, recording of reactions, and, eventually, synthesis and follow-up) was the useful strategy to detect the ability of school principals, and representatives from USRs, i.e., Regional School Offices<sup>1</sup> to grasp the importance of the Repertoire and to make predictions regarding its effective use. We report below the debate on value of the Repertoire of Professional Skills for innovation in the small school that provided a better understanding of how the Repertoire can affect professional development of teachers and enhancement of small schools.

#### ***The voice of the USR - Regional School Offices' representatives.***

From the interviews conducted, the Repertoire of Professional Skills for Innovation has the potential to be that system capable of responding to some of the needs that the Regional Offices most identify in vulnerable contexts, typically communities situated away from the coast, and in small inland schools. The dialogue with the territorial areas brings out how it is attributed a scaling up function ("We contacted all 10 territorial areas of Liguria from Sarzana to Ventimiglia, spoke to schools and comprehensive institutes with fractionated school buildings. This allowed us to intercept how the Repertoire can respond to the need for continuous support for innovation training" - USR Liguria) and might account for an incentive for many teachers to stay, ensuring greater school continuity ("The Repertoire

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<sup>1</sup> We acknowledge the participating USRs from Lombardy, Piedmont, Friuli-Venezia Giulia, Liguria, Veneto, Marche and Campania.

responds to a situation in which teachers need motivation to stay (...) where settings are complicated, such as in small schools, we need teachers to realize that it is worth the effort to stay and if they do stay they will also be helped by their surrounding setting” - USR Marche). Such continuity can be built by working on the tutor’s role, in a way that a more established function is achieved over only episodic performances, ensuring retention of innovation and peer training over time, intercepting problems on which to intervene or an organizational potential that schools may be developing. The Repertoire could also serve a function of encouraging confrontation with comparable and replicable worlds (“Our school setting is different; this is due to critical issues and scarce resources but also to a professional pride. The Repertoire could be seen as a gateway to look for new things, for supportive people, ambassadors for distinctive processes and models of small numbers” - USR Friuli-Venezia Giulia), thus intervening on that “loneliness” perceived by teachers in small schools, and often a deterrent to experimentation and change (“The tool represents an important opportunity for teachers in small schools to escape from isolation, engaging in paths of dialogue and benchmarking with other schools and training settings to promote innovative teaching in communities that risk remaining anchored to more traditional ways of doing school” - USR Lombardy) so representing a tool of equity in ongoing professionalization (“Having a reference environment they can count on to recover professionalism and more suitable to accompany them on the way is desirable” - USR Friuli-Venezia Giulia).

### ***The voice of School Managers (SM)***

The managers<sup>2</sup> interviewed credit the Repertoire with an important role in achieving goals of quality educational offerings (“It might represent an important opportunity for small schools to come out of isolation and undertake paths of dialogue and benchmarking with other school and training realities” - SM from a Small School of Abruzzo) as a tool designed to support innovative teaching in settings that, also owing to little investment in training, risk remaining: 1) isolated from other reinventing education initiatives promoted by the Ministry of Education and Educational Research Institutions, and 2) anchored to a traditional way of doing schooling. Having the Repertoire in place gives us, in backlight, a map that sheds light on what

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<sup>2</sup> We acknowledge all school managers, throughout the north (Lombardy), centre (Umbria) and south (Abruzzo), who took part in the validation process of the Register.

skills are now necessary for innovation in the small school and, at the same time, may guide training initiatives for schools to take on directly with the funds they have (“The Repertoire, it seems to me, is more like something valuable for launching work paths on educational innovation” - SM from a small school of Abruzzo).

According to school managers, however, two basic dimensions must not be overlooked for the effective implementation of the Repertoire: time and motivation of individuals who will become part of this virtuous process. In particular, what emerges is the need to ensure that the Repertoire is perceived as a system for the professional enhancement that allows to overcome some of the barriers to entry that are normally posed by day-to-day workload of teachers in small schools (“In general, teachers rotate among schools very often, thus we need to make sure that the Repertoire may serve as a professional tool for their valorisation. Teachers in small schools face a significant ordinary load associated with long distances, which would be added to by this” – SM from a small school of Umbria) and, at the same time, a tool that underpins a continuous training opportunity for Tutors, an investment in their professional growth (“Joining the Repertoire is a consequence of a training investment. That of becoming teachers in other contexts should be an opportunity” - SM from a small school of Umbria).

### *The voice of small schoolteachers*

Teachers from small schools involved in the validation process recognize that there is great value in the Repertoire in terms of possibilities for overcoming that professional isolation that does not allow a peer confrontation, and also some perceived barriers associated with teaching complexity in multi-grade classroom situations (“I think it is very important to bring together professional teachers able to support other teachers, involved in a multi-grade classroom situation, who feel isolated and worried, and close themselves off, decreasing their own professionalism” - Small School Teacher from Emilia Romagna). They also regard the Repertoire as a tool that can be used to encourage, thanks to expert tutoring, a change in teaching practices and strategies (“very valuable, not only for small schools with multi-grade classrooms but also for larger schools that can be helped in devising new innovative ways” – Small School Teacher from Marche), and call, however, for the need to establish a dialogue between small schools experiences and the whole educational system, so that it becomes a driver of change for larger schools as well (“the fact that it only concerns small school teachers is a limit that contributes to further shut off the world of small schools. The experiences of Small Schools should be brought to larger

schools as well.” – Small School Teacher from Friuli-Venezia Giulia).

**What operational scenarios for functioning and what forms of governance as a Network?**

The spoken reflection played a key role in identifying preliminary scenarios for uses of the Repertoire at the regional level as well as forms of governance that could complement its use and define the research as a service capable of embedding this process within territorial policies.

***The Voice of the Regional School Offices' Representatives (USR)***

From the point of view of Regional School Offices, the tutor's work-related documentation and validation within the Repertoire is the main element they would focus on to define real implementations of the tool. Emerging is the need to provide for an assessment that is participatory from the grassroots (“The assessment should also move from the grassroots and be based on the tutor's work-related documentation and evidences also collected by school managers and teachers in the course of the tutor's action” - USR Representative, Liguria) and that can be used both for redesigning the action itself (“in the face of an experience that does not fully meet the expectations of the area in which it took action” - USR Representative, Campania) to guide the tutor toward reflecting on what skills need strengthening (“also through additional training that, at the network level, might be in the form of Tutor’s role upgrading” - USR Representative from Liguria). A concerted evaluation that is intended as a way to “add value”, also leveraging on the tutor's self-assessment (“it should be a moment for the Tutors to think about their own pathways and understand where they should improve; also a way to intervene on their planning or on refining some expertise indicators” – USR Representative, Friuli-Venezia Giulia).

With reference to the type of governance, the interviews with USR representatives demand for a form of coordination with the hub-schools as regards the creation of local offices in order to help preserve the Repertoire and to have professionals act as Mentors (“the Register will survive if the small school is supported by local offices, i.e. former provincial education offices; and purpose-oriented networks of schools, and by some minimal coordination from the USRs that can help the relation between networks and individual schools” – USR Liguria) by making the intervention in the smaller context more systematic and maintaining a model of area-based networking (“especially now that the requirement is to differentiate training between priorities of the local offices and priorities of individual

schools. The priorities of individual schools are covered by 60% of the funding provided by the Ministry of Education; there are also small schools that are able, thanks to the connection between local offices and INDIRE, to create purpose-oriented networks of schools that are more effective as regards the development line of the individual school itself but also of the local office” - USR Liguria). The Local Offices could play a significant role not only in triggering the emergence of networks (“All hub-schools can promote, within their area of reference, accession to the network, which in a first year would include ten schools. The institutionalization of the network will involve the identification of a regional lead school and at least 2 teachers per school, interested in assuming the roles of the tutor/referents” – USR Campania) but also in bringing together the needs arising from the local area with the requests from the more peripheral realities, contributing to the individualisation of issues to include among the national priorities and to the designation of tutors (“UTAs can be helpful to involve some school managers and, through them, other schools joining a territorial network. UTAs managers can also be of use in selecting the tutors who, to be activated, will inevitably have to be part of that school office, so that internal mobility within the region is not made complicated” – USR Lombardy). We need to work either on specific agreements among INDIRE, USR and MIUR, or on 60% that individual schools are allowed for training plans freed from 40% of the hub-schools, which are strongly committed to the nine national priorities, promoting specific interventions, respectful of the needs of the small school (“A possible scenario is to target the 60% that schools are permitted to allocate for in-service training. We could source from INDIRE educators who have not only done the planning but also had time to experiment in the classroom. Schools could also make network agreements among multiple schools to share experience and organize training activities together” - USR Veneto) thus providing experienced teachers with a way to practice in the first stages of peer tutoring.

### ***The voice of School Managers***

The SMs interviewed envisage some modalities for the economical sustenance of the process that underlies the Repertoire, including making use of resources from internal projects from NOPs but also from residual Funds (“For example, we still have residual funds after the 2009 earthquake for developing projects, this could be devoted to the Tutor position” - small school SD, Abruzzo) clearing any issues regarding the public evidence procedures they are often required to comply with, both for NOP – National Operational Programmes and PNSD - National Plan for Digital School

funding (“Does the Register replace the procedure? If it does, this would solve a problem. Conversely, if I am obliged to respect the procedure, I would need to set a Register score range in the public evidence procedure. We then need to consider the matter according to the administrative law” - small school SM from Abruzzo). Another possible financial support is to hire Tutors using 60 % of the funds that schools can commit to in-service continuing education or networking (“For a Comprehensive Institute such as the one located in Montorio, the total amount to be allocated is very low, about 1,000 euros, yet nothing prevents schools from networking - e.g., institutes with multi-grade classes - and planning to invest together in training of Tutors that will be shared by the various schools” – small schools SM from Abruzzo) or alternatively teachers appointed for the school strengthening (“in the primary school, for instance, we could ask teachers to devote part of their weekly time to service as a Tutor” – small schools SM from Abruzzo).

A component of network governance also emerges very clearly from the interviews with school managers. Regarding the use of 60% of the funds to be allocated to in-service training, for example, there is a need to create arrangements with school offices in the area and Conferences Services to allocate funds and to include the small schools that are often outnumbered in such networking organisations. An important role could be assigned to the Regional School Offices, USRs (“the USR in our territory provides for regional objectives, and among the regional objectives the support for small schools could be included, in relation to the number of small schools” - small school SM from Umbria) possibly reserving a “percentage” for those small schools claiming to have adopted mechanisms between mentors and mentees (“One of the mechanisms could refer to the adoption of a school and of mutual mentoring between schools and mentors that helped us to improve in all areas. We should try to ensure that schools work based on this vision, and even take on more than one tutor, even a team” - small schools SM from Umbria).

### *The voice of small schoolteachers*

The teachers had the chance to debate on how to use the Register to support small schools. They mentioned the need to work through networks for more professionals to support the same area (“I imagine a work of network, which is not of individual schools to help small schools stay open, but to encourage collaboration between small schools. A single Tutor, with a view to sharing and growing together to avoid isolation, could for example be called upon by several schools” - Small school Teacher from Friuli-

Venezia Giulia). The use of the Register that is shared within a local area can be part of a strategy of strengthening peripheral areas, also overcoming reluctance to change (“It is a response that leads to a better definition of the potential of decentralised realities. There is much opposition to contamination among schools, among parties of the same context, but an expert coming from the external world to carry out some sort of mentoring can help” - small school Teacher from Marche) often bound to mental obstacles that (“prevent them from implementing innovative methodologies, from taking flight, showing them how it should be done” - Small school Teacher from Marche).

### **Conclusions and perspectives**

Permanence in the local communities, continuing education, educational quality, and equity in professional development are some of the results that can be achieved with the systematization of the Register at the national level. The embracing of the Register as a solution capable of promoting a systemic action for small schools, and the socialization of the preliminary multi-step outcomes of validation (the first functional and strategic, the latter more related to identifying a profile's expertise in an organizational as well as didactic perspective) has guided the technological development of the environment and the creation of a disciplinary with a view to launching to launching a first experimentation on a national scale in close collaboration with the Ministry of Education.

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# **Epistemological Beliefs and Teaching-Learning Perceptions of Student Teachers in Myanmar: A Quantitative Study**

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## **Abstract**

Many studies have investigated whether the epistemological beliefs of teachers are related to the teaching strategies they use in the classroom and the way they see the role of teachers and students (Chan & Elliot, 2004; Aypay, 2010). The aims of this study are to find out about Myanmar student teachers' epistemological beliefs, their teaching-learning perceptions and how these two variables relate to each other and whether and how these beliefs and perceptions correlate with the students' background program, gender, and subject specialization. To fulfil the aims of the study, two survey instruments, Epistemological Belief Questionnaire developed by the researcher, and the Teaching-Learning Conception Questionnaire by Chan (2001) were used. The participants were 200 student teachers who joined the university of education via two different tracks; one of the tracks is more theory oriented and the other is more practice oriented. The reliability coefficients of the questionnaires are 0.80 and 0.84 respectively. The results of this study indicated that student teachers have sophisticated epistemological beliefs and constructivist teaching-learning perceptions. Significant differences in their beliefs and perceptions depending on their background programs were found although there is no significant difference in these variables according to gender and subject specialization.

Keywords: epistemological beliefs, teaching-learning perceptions, student teachers

## **Introduction**

One of the main purposes of education is to help learners acquire knowledge (Alsumait, 2015). An alternative claim says that the purpose of education is to stimulate learners to search for knowledge. The first sentence states the purpose of education in the traditional way which perceives the learners as the receivers. But the second one approaches it in the constructive way which expects that learners to get involved in structuring knowledge (Aypay, 2011). Nevertheless, both connect education with knowledge. Alsumait (2015) said that educators and educational researchers must pay attention to identify the factors that affect the teaching learning process and the construction of knowledge.

Different cognitive variables are influential in teaching and learning processes. The two variables among them are epistemological beliefs and teaching-learning perceptions (Schommer, 1990, 1994; Cheng et al., 2009; Aypay, 2011). Aypay (2010) defined epistemological beliefs as the beliefs on the nature of knowledge and pursuing knowledge. Student teachers' epistemological beliefs have great impact on their perceptions of teaching as well as learning (Schommer, 1990; Chan & Elliot, 2004).

As Chan and Elliot (2004, p. 819) asserted, teaching-learning perceptions of student teachers mean "their beliefs about their preferred ways of teaching and learning which include not just the meaning of teaching and learning but also the roles of teachers and pupils". At this point, teaching-learning perceptions can be differentiated into the two opposing categories: traditional and constructivist teaching-learning perceptions (Duffy & Roehler, 1986; Chan & Elliot, 2004; Schunk, 2008).

The teachers who perceive traditional conception in teaching use teacher-centred teaching approaches seeing teacher as the source of knowledge and the students as the passive receivers of knowledge (Chan & Elliot, 2004; Cheng et al., 2009; Aypay, 2011). In contrast, teachers with constructivist teaching-learning perception utilize student-centred teaching strategies and they try to help students develop the 21<sup>st</sup> Century skills such as critical thinking, collaborative, and problem-solving skills. They believe that learning can take place best in the environment which allows the active students participation in the teaching-learning process (Chan & Elliot, 2004; Cheng et al., 2009).

The education system in Myanmar had used the traditional teacher-centered approach for a long time. A major change in the curriculum was phased in between 1995 and 1999. This changed curriculum still promoted the traditional way of teaching and learning and it was used until 2015-2016 academic year. Since the teachers used traditional teacher-centered approach

and as a result of it, the students used rote-learning, and the education system of the country was an exam-oriented system (Soe et al., 2017). Htet (2020) assumed that an outdated approach to education enshrined in the curriculum made Myanmar’s Education system less effective and was not helping in developing the 21<sup>st</sup> century skills.

In response to that problem, the Ministry of Education (MOE) has carried out Comprehensive Education Sector Review (CESR) in three phases: phase 1 (rapid assessment); phase 2 (in-depth research and analysis of critical sub-sector challenges); and phase 3 (drafting and building ownership for an evidence-based National Education Strategic Plan, NESP). This is the birth of NESP which is a “roadmap for sector-wide education reforms” hoping to substantially improve access to quality education for all students in the country (NESP, 2016, p. 7).

Teachers play a crucial role in improving educational outcomes as the change agents of the new curriculum to apply the new teaching-learning approaches and a new assessment system (NESP, 2016). Starting from 2016, Myanmar government implemented a major education reform in accordance with the National Education Strategic Plan (NESP, 2016). It is clearly stated in NESP that teachers play a major to achieve NESP goals, which aim at implementing the reforms successfully.

Figure 1 NESP Goal and Nine Transformational Shifts



Source: NESP (2016, p. 25).

Figure 1 represents the nine transformational shifts that are necessary to achieve the NESP goals identified by the Ministry of Education (NESP, 2016). “An integrated approach to Teacher Education and Management reform”, one of the nine transformational shifts, has been necessitated by the fact that “improving the quality of teaching is essential to achieve national student learning standards” (NESP, 2016, p. 38). To achieve this goal, another transformational shift focuses on basic education curriculum aiming at developing knowledge, skills and attitudes of school children which are applicable in their lives to adapt with the socio-economic development needs of 21<sup>st</sup> century Myanmar. This transformational shift proves that the new basic education curriculum is based on constructivism because it focuses on developing learners’ 21<sup>st</sup> century skills which can best prepare the learners to fit in today’s world. In this regard, NESP (2016) insisted that the teachers’ ways of teaching have a huge impact on the achievement of the students. The shift in basic education clearly necessitates a shift in teacher education, too, from the traditional approach to teaching to the constructivist way of teaching.

The crucial role of education in facing 21<sup>st</sup> century challenges, the necessity of educational reform, the important role that teachers, and consequently teacher education played in the successful implementation of such reforms are widely recognized in the world. In the European context, Tibor Navracsics, Commissioner for Education, Culture, Youth and Sport, wrote on his foreword in Education and Training Monitor 2019, education is “at the top of the European Union’s political agenda. Together with the Member States, the European Commission has put solid foundations in place to ensure building a true European Education Area: overcoming barriers, boosting learning abroad, fostering mutual recognition of diplomas, the learning of foreign languages and early childhood education and care, as well as strengthening common values and inclusion” (European Commission, 2019, p. 3).

According to Navracsics, building a true European Education Area is “a bold, comprehensive project, covering all aspects of education – from kindergartens to post doctorates and lifelong learning”. He stressed the role of the teachers by saying “How successfully we make this project a reality depends notably on one factor: teachers, their training, their motivation, and their self-perception. Without motivated and confident teachers, the European Education Area will not have the impact we all expect from it” (European Commission, 2019, p. 3).

It is clear from the above that the shift from traditional to constructivist classroom practices, which is seen as a must so that education can prepare

learners for the challenges of 21<sup>st</sup> century life, is regarded as a priority in such wildly different contexts as Myanmar and the EU. However, this shift in classroom practices cannot take place without a shift in teachers' epistemological beliefs, in which their perceptions of teaching and learning, and in turn, their classroom practices are rooted. It is no wonder that it can also be found a growing number of international research not just in European context also in international research on Epistemological beliefs of teachers and student teachers (Schommer, 1990; Ozkal et al., 2009; Apyay, 2010, 2011) In the last few decades, such research examines "how individuals come to know, the theories and beliefs they hold about knowing, and the manner in which such epistemological premises are a part of the cognitive processes of thinking and reasoning" (Hofer, 2000, p.378).

Furthermore, as Küçükaydın and Gökbulut (2020) found "for many years, studies have been conducted in the field of education on the development and implementation of teaching programs for teacher candidates and the evaluation of their effectiveness." (p. 18), addressing the areas such as student teachers' knowledge, beliefs, and attitudes, on teaching practices (Schommer, 1990; Hofer, 2000; Ozkal et al., 2009; Apyay, 2010, 2011). Substantial literature (Schommer, 1990; Chan & Elliot, 2004; Cheng et al., 2009) showed that epistemological beliefs are multi-dimensional phenomena that influence various aspects of education.

In Myanmar, a constructivist-approach based curriculum reform both for the basic education sector and the teacher education sector has been implemented since 2016. A significant gap is found that no research has been done in Myanmar so far that studied student teachers' view on the teaching-learning process in relation with their programs. Moreover, there is no research that has been done in the teacher education sector which explores the epistemological beliefs of student teachers in Myanmar. As the epistemological beliefs and the teaching-learning perceptions of the teachers can shape the teaching-learning strategies they will later use in their classroom, it is of great importance to investigate not only their epistemological beliefs and the teaching-learning perceptions but also the relationships between them. Although a relatively large number of educational research studies on epistemological beliefs and teaching-learning perceptions of student teachers in international context have been conducted (; Hofer, 2000; Chan & Elliot, 2004; Cheng et al., 2009; Ozkal et al., 2009; Apyay, 2010,2011; Alsumait, 2015), more research on these two variables in relation with curriculum and education sector reform still need to be developed.

## **Literature Review**

### ***Epistemological Beliefs***

According to Schommer's scientific works, epistemological beliefs can be defined as the individuals' subjective beliefs on what knowledge is and how we know about something. In a similar way, Chan and Elliot (2004) defined epistemological beliefs as beliefs about the nature of knowledge and the acquisition of knowledge. Epistemological beliefs have progressively gained attention in educational psychology and educational literature since the late 1960s in describing underlying beliefs of individuals about the nature and structure of knowledge (Mohamed and El-Habbal, 2013).

Although a large amount of literature regarding epistemological beliefs had been written by the European authors starting from 18th century, studies on epistemological beliefs proliferated in the last quarter of the 20th century (Aslan, 2017). Despite the growing interest in understanding and clarification of beliefs held by student teachers, research on student teachers' epistemological beliefs is still not so plentiful (Chan & Elliot, 2004).

Chan and Elliot (2004) explained that a teacher with naïve epistemological beliefs thinks that knowledge is certain, simple, and unchanging; knowledge comes from the elders such as group leaders, teachers, and parents; he/she learns concepts quickly or does not learn at all; and the ability to learn is fixed and innate. In a contrast, a teacher with sophisticated epistemological beliefs believes that knowledge is uncertain, complex, and changing; knowledge can be acquired by reasoning processes and the learner can construct knowledge (Howard et al., 2000; Schommer, 1994).

Referring to Schommer (1990) and Başbay (2013), Balta concluded that those with superficial epistemological beliefs (naïve epistemological beliefs) assume that knowledge is clear, simple, and precise and people with authority have knowledge while those people with advanced epistemological beliefs perceive that knowledge is changeable, and the ability to learn can develop if the required effort is put. This belief recognizes learning as a process (Balta, 2018).

### ***Teaching-Learning Perceptions***

Chan and Elliot (2004) defined teaching-learning perceptions as the ways the student teachers perceive what teaching and learning are and the role of students and teachers. Chan and Elliot's (2004) concepts about teaching and learning are associated with two teaching-learning approaches: traditional or

transmissive and progressive or constructivist approaches to teaching and learning.

The constructivist approach to teaching and learning focuses on creating an active learning environment which can promote the development of the students' creativity, critical thinking, collaboration, and problem-solving skills (Chan & Elliot, 2004; Cheng et al., 2009). In contrast, the traditional approach to teaching and learning emphasizes conveying information from the teachers to the students by using teacher-centered teaching strategies (Chan & Elliot, 2004). The constructivist approach to teaching and learning views learning as the acquisition and creation of knowledge by the learners through their reasoning and justification while the traditional approach sees learning as the learners' absorption of information or knowledge which is transferred by the teachers (Chan & Elliot, 2004).

In constructivist perspectives, teachers are expected to support cooperation among the students and to motivate students to take responsibilities for their learning (Schunk, 2015). In traditional view, teachers are regarded as the knowledge source and the students as the passive receivers of knowledge (Chan & Elliot, 2004). Unlike the traditional view, the constructivist point of view accepts that students have "the role of accessing, processing and structuring the information actively" instead of receiving information passively (Uslu, 2018, p. 238).

In many educational studies, the importance of the perceptions of teachers and students on the teaching-learning environment and a strong relationship between their teaching-learning perceptions and academic achievement have been shown (Ozkal et al., 2009; Mohamed & El-Habbal, 2013; Tezci et al., 2016). Tezci et al. (2016) asserted that understanding the student teachers' perceptions of teaching and learning can be a great help in implementing a successful educational reform and effective teacher education program. As the teachers are the ones who implement the curriculum in the classroom, the success of the reform process can be predicted by examining the teachers' beliefs regarding the reform and their teaching-learning perceptions (Tezci et al., 2016).

There are various studies about the teaching-learning perceptions of student teachers: three teaching approaches were identified by Martin and Balla (1991); a teacher centered and a student centered teaching approach was identified by Trigwell and Prosser (1993, 1996); Gow and Kember's (1993) talk about two teaching approaches (learning facilitation and knowledge transmission); Chan and Elliot's (2004) talk about teaching-learning conceptions (traditional and constructivist teaching conceptions). Here, it is found out that the literature seems to use approaches, conceptions, and perceptions interchangeably. Teacher educators may use their

understanding of how student teachers perceive the concepts of teaching and learning to initiate the desirable changes in the learning process of student teachers and the teacher education system.

### ***The Relationship between the Two Variables***

Many researchers have reported that the epistemological beliefs of teachers are related to the teaching strategies they use in the classroom and the way they see the role of teachers and students (Hashweh, 1996; Chan & Elliot, 2004; Apyay, 2010). Furthermore, epistemological beliefs play a vital role in the learning process of the students in a way that they influence the students' comprehension and cognitive processes, and the learning strategies they tend to use (Chan & Elliot, 2004; Cheng et al., 2009; Apyay, 2010).

A growing number of research studies have shown that the teachers' perceptions on teaching and learning are beliefs driven (Chan & Elliot, 2004; Apyay, 2011). According to Kitchener and King (1981), Ryan (1984), and Songer and Linn (1991), "individuals' epistemological beliefs have been directly linked to their comprehension, meta-comprehension, and interpretation of information" (Er, 2013, p. 208). In addition, Schommer (1998) stated that there is a growing body of evidence on epistemological beliefs affecting academic performance. Er (2013) confirmed Schommer's finding by stating that epistemological beliefs determine the ways individuals obtain and justify new information, their levels of comprehension, their learning strategies and the time and effort they spend on learning.

All these findings indicate the strong connection between epistemological beliefs of teachers and their classroom behaviours. Examining these beliefs are important, because the epistemological beliefs drive teachers' beliefs about teaching and learning and all these beliefs have a large impact on their behaviours in the classroom and the other way around. As a result, the teachers' epistemological beliefs and the teaching-learning perceptions influence the students' learning process, academic performance, and achievement. From this regard, it can be interpreted that student teachers' epistemological beliefs and teaching-learning perceptions need to be understood as they will one day become teachers and their behaviours in classrooms and their teaching strategies will be determined by their beliefs and perceptions of knowledge and the teaching-learning process.

### **Aims of the Study**

The aims of this study are to find out about Myanmar student teachers' epistemological beliefs, their teaching-learning perceptions and how these two variables relate to each other and whether and how these beliefs and perceptions correlate with the students' background program, gender, and subject specialization.

### **Research Questions and Hypotheses**

Four main research questions will guide this study to achieve the above-mentioned aims of the study.

1. What are Myanmar student teachers' epistemological beliefs?
2. What are Myanmar student teachers' teaching-learning perceptions?
3. Is there any significant difference in epistemological beliefs and teaching-learning perceptions of the student teachers according to their programs, gender, subject combination?
4. In what ways are the epistemological beliefs and teaching-learning perceptions of the student teachers related?

### **Research Methods**

#### ***Population and Samples***

The target population of the study is all student teachers in Myanmar. There are two leading universities of education in Myanmar, Yangon University of Education (for Lower Myanmar) and Sagaing University of Education (for Upper Myanmar). The accessible population will be the student teachers from Sagaing University of Education (Upper Myanmar).

There are two different tracks to join the pre-service program for Bachelor of Education degree. The first track is for those who finished high schools with high marks, and they can join the University of Education directly. The other track is for those who did not get good enough marks in high school leaving examination and they joined Education Colleges for a two-year program for a teacher education diploma. After getting that diploma, around 10 % of the students who are recognized as qualified can join the University of Education right from third year as their previous two years in education college is acknowledged by the university.

The pre-service teacher education programs at Universities of Education and the Education Colleges are run differently. At Universities of Education, the programs emphasize more theoretical and academic knowledge such as

educational philosophies and management, educational psychology, methodology and so on, while Education Colleges emphasize more practical and co-curricular activities such as arts and music, agriculture, and domestic science.

In third-year BEd classes, students from the two different above-mentioned programs study together under the same curriculum and practice. This makes the researcher interested to find the answers to the established research questions from the perspectives of student teachers from both groups. In this study, both types of the students will be selected proportionately to address the research aims. To optimize the result of the quantitative part, a total of 200 third year BEd students from Sagaing University of Education will be selected from the population of 600 third year students by using stratified random sampling method.

### ***Instruments***

The first part of the questionnaire asked three questions on demographic data: track (how they joined the University of Education), gender, and specialized subjects followed by the two sets of questionnaires. A thirty-three-itemed epistemological belief questionnaire (EBQ) developed by the researcher was used to measure the epistemological beliefs of student teachers. The second set of questionnaires is the Teaching and Learning Conception questionnaire (TLCQ), developed by Chan (2001). It contains thirty items, each representing one of the two, diagonally different conceptions of teaching and learning: the traditional and the constructivist one. A five-point Likert scale (1 strongly disagree to five strongly agree) was used for the participants' rating.

#### ***Epistemological Beliefs Questionnaire***

The Epistemological Beliefs Questionnaire consists of 5 dimensions; Certainty of Knowledge (6 items), Simplicity of Knowledge (7 items), Source of Knowledge (8 items), Justification of Knowing (7 items), and Acquisition of Knowledge (5 items). To make the instrument more accurate and to avoid response bias, the items of the questionnaire were written in both positive and negative forms and distributed evenly among the questionnaire. There were eighteen items written in a positive form and the other fourteen items were written negatively.

For content validity, the questionnaire was evaluated and revised by the experts who are well experienced and have achieved mastery in the field of this study. According to this review, to the comments, and suggestions, the instruments were modified again. The first draft of EBQ contained 35 items. To test the reliability of the questionnaire items, the first pilot study was done

in an Education College in Sagaing Region. A total of 150 teacher candidates (75 males and 75 female) were selected as samples by using stratified random sampling. From the result of this study, the Cronbach's alpha value of the questionnaire was .58.

Due to the lower reliability coefficient of EBQ, the items were modified again by rearranging the order of the items, structure of the sentences, and eliminating the items with poor inter item correlation value. Second pilot testing for the revised 33 itemed EBQ was conducted in two Education Colleges in Mandalay region which is the neighbour of Sagaing region and has similar geographical and cultural context. A total of 300 student teachers were selected from the population of 1500 student teachers from the two colleges by using stratified random sampling technique.

After requesting permission from the responsible persons, questionnaires were distributed to the selected participants (150 males and 150 females) from two Education Colleges in Mandalay Region on the 7th and 9th January 2019 and collected on 14th January 2019 with the valid response rate of 99%. The Cronbach's alpha value for the reliability coefficient of the questionnaire became .88. This value indicates a high reliability according to the explanation of Gay et al., (2012, p. 177).

#### *Teaching-Learning Conceptions Questionnaire (TLCQ)*

The original questionnaire was translated into Burmese which is the official language in Myanmar. The translated version of TLCQ was sent to the experts who have high experience in research methodology and in English and Burmese languages for validation. A pilot study for assessing the reliability of this translation and its adaptability in Burmese context was conducted online in April 2021 with seventy-four student teachers from Sagaing University of Education which is in the same geographical area with the first pilot studies for EBQ. The reliability coefficient for the translated questionnaire was 0.78.

#### *Data Collection and Analysis*

The data collection was done online due to the pandemic and political situation in Myanmar. The completed questionnaires were converted from Google Forms into SPSS. The data were analysed by using descriptive statistics as well as inferential statistics. Descriptive statistics results answer research question 1 and 2 while inferential statistics answer research question 3 and 4.

### **Findings**

Descriptive statistics, independent samples t-tests, one way ANOVA, and Pearson's correlation coefficient were conducted to analyse the collected

data. Table 1 shows the mean values and standard deviation of the dimensions of epistemological beliefs. According to Table 1, it was found that the mean values for overall dimensions of epistemological beliefs were within 3.42 to 4.06. • The participants showed high levels of agreements on sophisticated epistemological beliefs except for the source of knowledge dimension.

Table 1 *Means and Standard Deviations for the Dimensions of Epistemological Beliefs*

Epistemological Beliefs	Mean	SD
Certainty of Knowledge	4.06	.407
Simplicity of Knowledge	3.80	.369
Source of Knowledge	3.42	.339
Justification of Knowing	3.86	.386
Acquisition of Knowledge	3.85	.485
Overall	3.80	.298

Note: 1.00-2.33=Low 2.34-3.67=Moderate 3.68-5.00=High

Table 2 shows the mean values and standard deviations of the teaching-learning perceptions of student teachers. It was found out that the participants showed high levels of agreements on constructivist perceptions on teaching and learning.

Table 2 *Means and Standard Deviations for the Teaching-Learning Perceptions*

Teaching-Learning Perceptions	Mean	SD
Constructivist	4.18	.356
Traditional	2.66	.608

Note: 1.00-2.33=Low 2.34-3.67=Moderate 3.68-5.00=High

To find out whether there were significant differences in the student teachers' epistemological beliefs according to the different tracks through which they joined the University of Education, or not, independent samples t-test was calculated. Table 3 shows the independent samples t-test results for the 5 dimensions of epistemological beliefs of student teachers. The significant differences were found in their epistemological beliefs based on the two different tracks.

Table 3 *Independent Samples t-Test Results for EBs of Student Teachers from Different Tracks*

Dimensions of Epistemological Beliefs	Track	N	Mean	<i>t</i>	Mean Difference	<i>df</i>	<i>p</i>
Certainty of Knowledge	Direct	130	4.13	3.310	.195	198	<b>.001</b>
	Bridge	70	3.94				
Simplicity of Knowledge	Direct	130	3.83	1.554	.085	198	.122
	Bridge	70	3.74				
Source of Knowledge	Direct	130	3.47	3.021	.149	198	<b>.003</b>
	Bridge	70	3.32				
Justification for Knowing	Direct	130	3.91	2.235	.127	198	<b>.027</b>
	Bridge	70	3.78				
Acquisition of Knowledge	Direct	130	3.90	1.708	.130	118.639	.090
	Bridge	70	3.77				
Epistemological Beliefs	Direct	130	3.85	3.167	.137	198	<b>.002</b>
	Bridge	70	3.71				

Note:  $p < 0.05$

The results of the independent samples t-test for the teaching-learning perceptions of student teachers based on the tracks can be found in table 4. According to table 4, there is a significant difference in the traditional teaching-learning perceptions of student teachers who joined the University of Education through direct and bridge tracks.

Table 4 *Independent Samples t-Test Results for TLCs of Student Teachers Based on Different Tracks*

Teaching Learning Perception	Track	N	Mean	<i>t</i>	Mean Difference	<i>df</i>	<i>p</i>
Constructivist Perception	Direct	130	4.18	.406	.020	178.233	.685
	Bridge	70	4.18				
Traditional Perception	Direct	130	2.59	-	-.207	198	.022
	Bridge	70	2.80				

Note:  $p < 0.05$

Table 5 shows the differences between the epistemological beliefs of male and female student teachers. According to table 5, it was found out that the epistemological beliefs of student teachers were not different based on their gender.

Table 5 Independent Samples t-Test Results for EBs of Male and Female Student Teachers

Dimensions of Epistemological Beliefs	Gender	N	Mean	t	Mean Difference	df	p
Certainty of Knowledge	Male	85	4.07	.358	.021	198	.479
	Female	115	4.05				
Simplicity of Knowledge	Male	85	3.76	-	-0.061	198	.246
	Female	115	3.83				
Source of Knowledge	Male	85	3.44	1.001	.048	198	.318
	Female	115	3.40				
Justification for Knowing	Male	85	3.84	-0.696	-0.039	198	.487
	Female	115	3.88				
Acquisition of Knowledge	Male	85	3.78	-	-0.121	198	.081
	Female	115	3.90				
Epistemological Beliefs	Male	85	3.78	-0.709	-0.030	198	.479
	Female	115	3.81				

Note:  $p < 0.05$

Independent samples t-test results for teaching-learning perceptions of male and female student teachers are shown in table 6. It was found out that there is no significant difference between the teaching-learning perceptions of student teachers based on their gender.

Table 6 Independent Samples t-Test Results for TLCs of Male and Female Student Teachers

Teaching Learning Perceptions	Gender	N	Mean	t	Mean Difference	df	p
Constructivist Perception	Male	85	4.21	.985	.050	198	.326
	Female	115	4.16				
Traditional Perception	Male	85	2.66	-	-0.009	198	.918
	Female	115	2.67				

Note:  $p < 0.05$

To find out the differences in the epistemological beliefs of student teachers according to their subject specialisation, ANOVA test was conducted. The ANOVA results are shown in table 7. According to table 7, there is no significant difference in the epistemological beliefs of student teachers depending on their subject specialisation.

Table 7 ANOVA Results for EBs of Student Teachers according to their Subject Specialisation

Dimensions of Epistemological Beliefs		Sum of Squares	df	Mean Square	F	p
Certainty Knowledge	Between Groups	.567	2	.283	1.720	.182
	Within Groups	32.457	197	.165		
	Total	33.024	199			
Simplicity Knowledge	Between Groups	.005	2	.002	.016	.984
	Within Groups	27.138	197	.138		
	Total	27.143	199			
Source of Knowledge	Between Groups	.324	2	.162	1.418	.245
	Within Groups	22.492	197	.114		
	Total	22.816	199			
Justification Knowing	Between Groups	.380	2	.190	1.277	.281
	Within Groups	29.329	197	.149		
	Total	29.709	199			
Acquisition Knowledge	Between Groups	.501	2	.250	1.066	.346
	Within Groups	46.257	197	.235		
	Total	46.758	199			
Epistemological Beliefs	Between Groups	.255	2	.127	1.439	.240
	Within Groups	17.458	197	.089		
	Total	17.713	199			

Note:  $p < 0.05$

Table 8 shows ANOVA results for the teaching-learning perceptions of student teachers based on their subject specialisation. The results show statistically significant differences in traditional teaching-learning perception of student teachers who take different subject specialisations.

Table 8 ANOVA Results for TLCs of Student Teachers according to their Subject Specialisation

Teaching-Learning Perceptions		Sum of Squares	df	Mean Square	F	p
Constructivist Perception	Between Groups	.038	2	.019	.150	.861
	Within Groups	25.127	197	.128		
	Total	25.166	199			
Traditional Perception	Between Groups	2.665	2	1.332	3.698	.026
	Within Groups	70.975	197	.360		
	Total	73.640	199			

Note:  $p < 0.05$

Pearson correlation analysis was conducted to find out the relationship between epistemological belief and the two dimensions of teaching-learning perceptions. Positive correlation has been found between their epistemological beliefs and constructivist perception, but the traditional perception is negatively correlated with their epistemological beliefs. This finding supports the researcher's expectations that students who have higher level of agreement on sophisticated epistemological belief perceive constructivist teaching-learning perceptions. Since they hold sophisticated epistemological belief, their level of agreement on epistemological beliefs negatively correlates with the traditional teaching-learning perception.

### Discussion and Conclusion

The results from quantitative data analysis are expected to reveal the differences in epistemological beliefs and teaching-learning perceptions of student teachers according to their programs, gender, and subject specialisation. The researcher assumed that epistemological beliefs of student teachers might influence their teaching-learning perceptions in a way that student teachers who hold naïve epistemological beliefs will perceive teaching and learning from traditional approach while the student teachers with sophisticated epistemological beliefs will approach teaching and learning process from the constructivist perspectives.

The quantitative findings proved the above expectations to be true except one finding which showed that there is no significant difference between the

epistemological beliefs and the teaching-learning perceptions of male and female student teachers. What teachers believe about knowledge, knowing, the role of teachers, the role of students, teaching, and learning affects their classroom practices, their reflection, their view of what to do and their justification of what is right and wrong. These beliefs are formed through their childhood and put an impact on what student teachers learn at their teacher education classes (Kagan, 1992 cited in Clarcken, 1997). According to the literature, it was expected to see the significant differences in how different genders believe and perceive the nature of knowledge, the role of teachers and students because the children are nurtured differently according to their gender and the male and female students are treated differently in Myanmar classrooms (Crisp & Clementi, 2020).

To solve this contradiction, to answer the research questions more clearly and to support these quantitative findings, a qualitative research study is planned to be conducted on this topic. By knowing how student teachers perceive knowledge and teaching-learning process according to their different programs, some suggestions for appropriate modification in the teacher education programs in Myanmar can be formulated. The results from this study are useful not only to shape the future pre-service teacher education programs in Myanmar but also to contribute to the literature on this topic.

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## **Fourth strand**

### **Non-formal education and its role in traditional schooling**



# MOOC-Assisted Sexual Education in Tertiary Education Setting

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## Abstract

The aim of present evidence-based research was to develop a fully open-access MOOC hosted by a Hungarian university to shape teachers,' parents' and any inquiring participants' considerably traditional views on the practice of childhood sex education. The necessity of a course like this is justified by the findings of cognitive psychology since only the transformation of thinking routines can lead to a change in the practice of education (Richardson, 1996, p. 104). The first phase of the research used mixed methodology in order to map the views of four focus groups, 20 kindergarten teachers and 20 parents with semi-structured interviews, and of N=403 kindergarten teachers with questionnaires. The results of the interviews gave the possibility to create a MOOC in childhood sexual development, sexual orientation and gender identity, principles of family-based and institutional sex education, and sexual abuse, in the second phase. We considered not just the cognitive, affective, and social functions to be filled; formal, non-formal and informal learning situations are offered by a course like this. The end-product is a twelve-week-long MOOC consisting of six modules for thirty flexible learning hours. The first time it was offered it attracted N=1,024 participants, their feedback was also discussed.

Keywords: childhood sexual abuse; kindergarten; MOOC; sexual education; university course

## Sexual Education in the Pedagogical Paradigm

A common dispute of the scientific and lay communities is the necessity of sexual education for kindergarten and lower primary students. Many of those who deny the necessity of sexual education believe that it means sexual enlightenment, or they would like to protect children from early effects triggering sexual interests. However, without the existence of institutionalised sexual education, children meet the issue in spontaneous everyday situations or at school with the help of the so-called latent curriculum. This multilayered and Janus-faced context is the theoretical framework of our research in which we try to map and understand sexual education in Hungarian educational setting. As a beginning, we offer the gist of consequences of the international and Hungarian narrative of this issue.

The contradictory nature of sexual education is clearly visible in the western theoretical and practical resources, and the bipolar views of the different agents are typically explained with sharp and invisible dividers, for example, moral values, religious background, political affiliation, or socio-economic status. The abovementioned dilemma on whether to protect children or not is explained by Robinson and Cavies (2017) in such a way that for parents having traditional views childhood is the age of an in-born innocence in which children are sexually inactive and heterosexual thus any information about sexuality could put an end to the innocence. On the other side of the coin, parents who support sexual education believe that adequate information prepares for puberty, prevents sexual abuse, and unintended pregnancy; it is even a smart tool against media stipulating women as sexual objects.

Although these factions seem to have a never-ending fight with each other, sexual education is continuously happening in some form. Caretakers, typically untrained in sexual education, already detect sexual-like behaviour in early childhood; however, they are uncertain how to handle that, and whether they need to signal it to the family at all (Simone-Balter et al., 2016). Scientists have made attempts to define the goals and content of sexual education. The best-known is the *Standards for Sexuality Education in Europe* (2010) issued by the World Health Organization Office for Europe and the German Federal Centre for Health Education (BzgA). According to this document, adequate sexual education is characterized by both progressive views for shaping for positive attitude towards sexuality and active preparation. The principles and outcomes of sexual education are summarised as follows (ibid., p. 27):

- (1) tolerant and open social atmosphere,

- (2) respecting gender differences,
- (3) critical attitude towards different sexual norms and models from human-rights point of view,
- (4) cognitive, socio-cultural, and emotional knowledge about the human body, sexually transmitted diseases, sexual abuse, and asking for help,
- (5) skills and abilities to handle sexual relationships based on equality, and
- (6) responsibility for themselves and their partner.

These principles suggest that psychosexual maturity is not static but an actual result of life-long learning and experiencing. Consequently, educational institutions can only establish the process with the help of continuous interaction, cooperation with parents and experts, and context-oriented approach.

In Hungary, sexual education, including sexual enlightenment, was officially banned after World War II, and only the consolidating measurements after the revolution in 1956 made the publication of books about sexual enlightenment possible (e.g., Hirshler, 1958). Another decade later, the so-called sexual-pedagogy emerged as an individual discipline (Szilágyi, 2003). Although sexual enlightenment entered the curriculum in the upcoming years, research in 1990 investigated that teacher candidates had not been prepared for managing this task (Győri & Schmit Simon, 1990). Contrary to different experiments and measures, Buda (2006, p. 11) summarized the situation of sexual education as follows: *'Maybe sexual-pedagogy is the most underdeveloped branch of [the Hungarian] education, both theoretically and practically speaking.'* Currently, the term 'sexual education' does not appear in the Hungarian National Curriculum in force; however, a new subject for 6-to-18-year-old students was introduced in the curriculum framework offering a preparation for family life. The syllabus of this subject consists of seven main topics; one of them is a slight approximation to sexual education (i.e., 'Topic 5: Gender – masculine/feminine identity – sexuality – relationships').

## **Methodological Considerations**

Since, on the one hand our research is dedicated to developing some products (i.e., a massive open online course and a supporting manual) to shape novice teachers' thinking on sexual education, this investigation could be considered as an action research (Klein, 2012). Applying a mixed-method research strategy (Creswell & Plano-Clark, 2009), two interdependent research phases were executed. First, in the qualitative phase, between 2019 and 2021, four focus group interviews were organised with parents and kindergarten teachers from the capital city and the rural areas of Hungary, then twenty parents and twenty kindergarten teachers took part in individual semi-structured interviews. Thus, we were able to collect enough data for the development of the products mentioned above. Second, between 2021 and 2022, the results of the qualitative phase were adapted into a quantitative study using an inventory for surveying N=403 kindergarten teachers of the country; since the results of this phase was not directly used for the end-product development, we do not discuss them in detail here.

For both phases, the scope of interest of our research group was distributed into thematic blocks as follows:

- (1) the issue of gender at home and institutional setting,
- (2) the conceptualization of sexual education, its connection to children's rights,
- (3) the content, output, starting time, and execution of sexual education, and
- (4) preliminary knowledge and practical experiences related to childhood sexual abuse.

Realising that the topic of sexual education is sensitive, a social and personal taboo, which has been highly politicized in Hungary recently (Pető, 2021), our research group made the decision of using convenience sampling with the exploration and invitation of the researchers' acquaintances. Consequently, the sample is not representative; however, systematic efforts were made for the principle of proportionality regarding interviewee's gender, residence, and highest level of education. In the sample of parents there were ten fathers and ten mothers educating a minimum one child aged 3 to 5, and one parent should have a basic or intermediate level of education to exclude the distortion caused by an advanced level of education. As for the kindergarten teachers, we did not set any restrictions; however, it is worth noting that only one male interviewee could be recruited. Similarly, it was a burdensome task to

recruit fathers, especially those with a basic level of education. This could be regarded as a dominant limitation of the current research.

All the interviewers were members of our research group or final-year students at Eötvös Loránd University Faculty of Primary and Pre-School Education, Budapest. During their preliminary interviewer training, they were familiarized with the structure of the interview, and the unified code of interviewing. The current restrictions due to the COVID-19 pandemic were considered; therefore, both online and face-to-face interviewing were available for the participants. Interviews were voice recorded and transcribed by the interviewers with comments on the relevant utterances (e.g., ‘long pause,’ ‘wailing’, and ‘sighs’) for later usage. Interviewees had been informed of the significance of the research and the peculiarities of data security and anonymity, then their volunteer participation was documented by signing the letter of contribution. The Research Ethics Committee of Eötvös Loránd University Faculty of Pedagogy and Psychology, Budapest granted an ethical approval under No. 2021/130-2.

Two members of our research group coded, and one member processed the text corpus consisting of forty transcriptions with the help of ATLAS.ti™ qualitative data processing software twice. The application of this kind of investor triangulation was inevitable to uphold the consistency of coding and to reduce subjectivity (Denzin, 2017). A hybrid approach was adopted for data analysis (Fereday & Muir-Cochrane, 2006): an inductive Grounded Theory analyses on the focus group interviews had generated a list of codes which were later used for deductive semantic content analysis in the case of individual interviews (Krippendorff, 2019). Overall value of the Krippendorff’s alpha coefficient was in the range of acceptability; the inter-coder disagreement could be explained with interviewee’s hesitations and self-contradictions.

### **Results of Self-Contradictions**

The sensitive nature of the topics discussed could be detected easily in the results of the interviews dealing with parents’ and kindergarten teachers’ thinking. Different forms of hiatus signalled interviewees’ attempts to get some time for reconsideration or to initiate a move to avoid answering to slippery questions. Both samples showed a unique way of language usage: it was typical that respondents utilized an infant language to be able to denote genitals and sexual life. Another common way of coping was avoidance of uttering a noun or a verb, instead of that, interviewee nodded or put an emphasis on the deixis (e.g., ‘You know... *that* thing.’). As for parents, circumscribing with word creation was also

identified, for example, 'baby hole' or 'the gap between the legs' for vagina, 'pooping hole' for anus, 'melon growing in the belly' for foetus, and 'cut it out from the belly' for caesarean delivery. Similarly, parents tended to euphemise the movements of the sexual intercourse or pregnancy.

From a communication point of view, it was a trend that respondents misunderstood the questions, and the interviewers were not eager to rephrase them. Answers were frequently self-reflective in nature, a retrospective storytelling in connection to the respondents' childhood, or highly sensitive topics were discussed in conditional sentences (e.g., 'If I had a son, and a paedophile approached him, I would...'). The safe-place-like environment created by the interviewers was supportive enough to make interviewees express their fears, doubts, and insecurities in relation to certain topics and situations (e.g., talking about pregnancy and death, preparing children for reacting to sexual harassment adequately).

Each interview of the corpus was additionally coded by an overall impression on respondents' general attitude towards the topic of sexual education. The ratio of progressive and restrictive attitude in the two samples was quite similar; however, some tendencies could be figured out. In the parental sample, fathers tended to be more restrictive, especially those who had daughters, while among kindergarten teachers a young age or having so far had a short career suggested rather progressive attitudes. Kindergarten teachers with restrictive attitudes were accompanied by the naive view that sexual education was a taboo in kindergarten setting, and primary school should be the first agent to teach that subject. It is also notable that some parents echoed the current ideology of the Hungarian government (e.g., '*even, regarding the future, one of my biggest fear is that this gender-ideology will infect kindergartens and my child, too*' Parent 9). The misuse of the nomenclature suggested low level of sexual education: interchanging the issue of gender and sexual identity was quite typical; there was even a parent who believed that a boy in princess-like dress dancing in the kindergarten was already a transsexual.

In the following, the detailed results of both samples are jointly introduced according to the thematic blocks listed above. It is worth mentioning that our analysis is not a direct comparison but a simultaneous unveiling of the samples.

First, our intention was to make respondents *conceptualise sexual education* and to determine its relationship with sexual enlightenment. Most of the interviewees of the two samples knew that sexual education and sexual enlightenment are not each other's synonyms. Nevertheless, kindergarten teachers had the necessary knowledge for conceptualizing and describing its content: '*I think, sexual enlightenment should be performed*

*in Grades 7 or 8 in elementary school. During it, children will get some information about sexual intercourse and its consequences, birth control methods, sexually transmitted diseases, and unintended pregnancy.'* (Kindergarten Teacher 19). Parents were speculating a lot: one quarter of the interviewees thought that terms sexual education and sexual enlightenment had the same meaning, another one quarter expressed uncertainty. There was a parent who shared his own concept about the so-called 'dynamic versus natural' sexual education, namely, children are commanded to face with their body in the case of 'dynamic' sexual education, while in the other case it happens through self-exploration. Another parent argued that based on tolerance, sexual education is a preparation for being able to experience happy and fulfilling sexuality in the future regardless the children's sexual orientation.

The interview questions of the second thematic block inquired about the *source and knowledge for sexual education*. The sample of parents was dominated by traditional views; most of the respondents insisted that the prime source for sexual education was the parents setting a model for their children. The role of the media was highly emphasised. Parents' approach towards that was highly technocratic, and therefore they accepted the existence of the smart devices in their alpha-generation children's lives; however, they also believed that media-related consciousness could protect their children (e.g., prohibition of television-watching, selection of content, and filter and blocker applications). Many parents complained that contemporary cartoons and extremely popular superhero franchises containing explicit sexual content were a trigger for childhood aggression. Another tentative parental notion was the role of kindergarten in sexual education, especially the peers who spread false information to each other. Scepticism related to sexual education in the kindergarten was also voiced. Before-mentioned opinions could also be found in the sample of kindergarten teachers, nevertheless respondents' answers typically dealt with their own sexual education. It was revealed that nineteen kindergarten teachers did not have any sexual-education-related course in the tertiary education but sixteen were curious for any further education in this topic. Retrospectively, the primary sources of kindergarten teacher's knowledge were biology and home teacher's classes in basic and intermediate education.

Continuing our investigation into views on sexual education, another set of questions dealt with the *content of sexual education*. The trio of body image, bodily self-determination, and gender/sexual identity was mostly present in both samples; however, the related outputs were different (e.g., the depth of getting to know human organs or dimorphism). The so-called

underwear rule was not well-known among kindergarten teachers, while parents were somehow able to explain the term as a rule of drawing an absolute line. Similarly, bodily self-determination was a latent concept for the respondents of both samples: a right effecting the children but that must be given by the parents. As Parent 4 stated, *'I don't have the right to control his body. I can't punch him to death. I can't hang him into hydrochloric acid, donno, I can't abuse him, because that is his body.'* A parent enlarged the scope of bodily self-determination stating the fashion-model children's body degraded to commercial goods and data on social media. The appearance of the issue of gender in sexual education and everyday parenting situations brought self-contradictions. In the case of parents, even the same respondent could express the desire to perform gender-stereotype-based discipline (common clichés like 'boys don't cry' or 'boys are soldiers') and the preference of unisex toys. For kindergarten teachers, two topics were affected by gender-based differentiation: tasks (role-play for girls, construction-like games for boys) and discipline ('girls are neat,' 'boys are naughty'), and likewise, the disappearance of the clear distinction between female and male roles, and the necessity for socialization were present simultaneously. Only a few respondents had the intention to explain any related phenomena, for example, according to Parent 7, the speed of girls' development was significantly higher which led to a proper adaptation to public education system while the less-matured boys were forced into a stressful position to fulfil the socially required masculine role model.

It was asked whether there was an ideal *starting age of sexual education*. The typical answer was 'on demand;' however, the range was quite wide from infancy to primary school. As Kindergarten Teacher 12 referred, *'but they start this at a very early age, when they dress the kid into pink or blue'*. Some fathers seemed exceptionally conservative, stating that the later the better.

Researchers found there is always a trigger which leads to the *sparkling of sexual education*. Parents declared that children's direct questions or media-related experience were the provocation, meanwhile some sporadic comments suggested that the architectural peculiarity of the kindergartens (i.e., toilets were shared or just a wind-blown curtain separated the boys from the girls) played an important role. Kindergarten teachers affirmed that sexual education was a parental role primarily, and their responsibility was just marginal. Communication between kindergarten teachers and parents were generally initiated in the case of experiencing some problematic sexual behaviour in the kindergarten; however, kindergarten teachers' intention for conversation was commonly one-way since parents

tended to deny the existence of the problem. Anyway, denial and putting the topic onto the list of taboos seemed to be a frequent parental solution. An explanation for that was kindergarten teachers' incompetency and impotency that was why parents preferred getting some help from close friends. Also, the trend of parenting causing stress was detected in a focus group interview: *'you know, we want to do it right, but we really don't know how to do it in the best way.'* (Focus Group 4, p. 12).

The interviewees of both samples mentioned that they had already *experienced children's sexual behaviour*. Some parents shared vivid reports about their children's masturbation, while kindergarten teachers enlarged the list of different sexual behaviours with the imitation of sexual intercourse with dolls, and experiments with the body (e.g., kiss on the lips, inspecting and touching each other's genitals). The fact that many kindergarten teachers mentioned these activities as secret ones happening in bushes or behind the curtain, it is reasonable to assume that children are aware of the taboo nature of sexual behaviour. Some kindergarten teachers proposed that child-to-child abuse was already linked to these experiments, for example, tearing off underwear, biting labia, and extortion for kisses on the lips.

Respondents' direct or indirect *experiences with childhood sexual abuse* were sought in the last block of the interviews. Parents tended to live in a fool's paradise: an overwhelming majority of the interviewee believed that childhood sexual abuse existed only in the headline-chaser media programmes or other's scary tales; their children were well-protected, and behavioural irregularities of their children would make them suspicious. Contrary to this, a parent from focus group 4 stated the following, *'latency is the highest in this age-group in Hungary. It is really interesting because we tell our kids to be afraid of the exhibitionist man in the park, but in many cases the uncle is the perpetrator.'* (p. 17). Three parents admitted that they had already experienced pedagogical abuse, for example, the kindergarten teacher mocked their son's long (i.e., 'girlish') hairstyle; the boy was traumatized and needed an immediate haircut. Interestingly, many respondents of the parental sample considered abuse as sexual or verbal harassment, totally independent from physical abuse. Many of the parents admitted that they preferred the legal way of handling a hypothetical case of abuse only for the interview, otherwise, they would commit vigilantism: *'I would tear off his dick and toss it into his mouth, then I would bury him here, at the end of the garden, something like this.'* (Parent 14). As for the legal handling of the childhood sexual abuse cases, some respondents questioned children's trustworthiness. A secondary school teacher mother complained that she had already taken part in a course about sexual abuse,

but the trainer was unprepared, and the course lacked any concepts and practical solutions. As for kindergarten teachers, the more experienced the teachers were, the more likely that any sexual-abuse-related case was mentioned. In the sample of kindergarten teachers, altogether five respondents recalled previous events; however, media and acquaintances were also mentioned as sources of information about childhood sexual abuse. Being professionals, kindergarten teachers were able to give a longer list of possible symptoms of abuse, for example, visualization in games, and wide range of physical and mental signs. Self-contradiction was quite common in connection with handling abuse cases: they knew that informing parents could be the first step; however, being afraid of any confrontation promoted the usage of the legal system. Nevertheless, respondents expressed uncertainty who they really could get help from, and the chance of false alarms was also discussed in focus group 3, *'There was a girl who had bluish marks on her thigh. Of course, it turned out that it had been caused by something else, but I think, if you might suspect something, you need to signal.'* (p. 16).

### **An End-Product: MOOC for Sexual Education**

As mentioned above, one primary goal of our research was the development of an interventional tool based on the research results. Since preparation to handle the issue of sexual education is a neglected part of the Hungarian public tertiary education, our intention was to offer a solution to fill this gap. Regarding the end-users, the proposed MOOC would have a university affiliation, meaning a formal education; however, it would also show some non-formality due to its optional status in the list of offered courses and the availability for public.

The first stage of the development of the MOOC was an optional course for BA students of Eötvös Loránd University Faculty of Primary and Pre-School Education in the autumn semester of 2021. This pilot project was a two-lesson-per-week course entitled 'Sexual Education in Early Childhood.' In the design phase we summarised our expectations in four categories:

- (1) Knowledge: first step is the familiarization with the essential theoretical content which can be utilized later, for example, the theory of sexual education, some WHO-approved scientific concepts, and the legal background.
- (2) Skills: an emphasised skill is the ability to recognise any action against children's rights in progress and an effective intervention against it. A prerequisite for this is the practical implication of the theory,

cooperation with parents, and the sensitivity to be able to detect endanger or abuse.

(3) Attitude: the shaping of course-takers' cognitive and affective factors should occur in parallel. The ideal students should display unbiased, non-prejudiced, sensitive, health-centred, and children-oriented attitude at the end of the course.

(4) Autonomy and responsibility: although the source of knowledge about sexual education is typically acquired by autodidactic activities, here participants are trained to integrate the topic into their life-long learning and realise sexual education in harmony with European protocols.

In the second stage, by using the pilot-course-taker participants' feedbacks, we set a two-level approach to organise the content of the MOOC for the spring semester of 2022. Firstly, we determined the basics, which are the nomenclature of sexual education, the legal background, and the theory of sexual development. After that, we assigned special, hot, and sensitive topics we had discovered in our research project. With these design-steps it was possible to cover topics in-depth, for example, LGBT+ and gender non-conforming children and different phobias related to them, the Swedish model of gender-neutral education, risky sexual behaviour under intoxication, sexual harassment and abuse in sport, and the misconceptions of sexual education.

We premised two didactical principles: besides offering up-to-date and authentic information in a well-organized way using digital tools, it was also a part of our mission to make participants self-reflect and ensure a safe place for their emotional release. The course material of the MOOC was distributed into six modules, and the structure of the modules was constant. First, an introductory part listed the learning goals, which was followed by the exact content broken into units by different authors. Participants could already find additional materials; however, there was a dedicated section for further readings. Knowledge acquisition was checked with 6-to-10-item quizzes, typically these were multiple choice tests, nevertheless matching and gap-filling activities were also used. An essential part of shaping participants' thinking was the self-reflective essays; these were regulated with the help of prompts with a minimum length of five hundred words. Quizzes were autocorrected by the MOOC system, while course facilitators assessed the self-reflective journals using different scales. It is worth mentioning that end-of-module assessment allowed for assessing the course itself because participants were asked to fill a feedback survey.

The first run of the MOOC was quite promising. In the spring semester of 2022 1,046 students enrolled the course, and five facilitators, the authors

of the course material at the same time, could help their progress. Participants tended to not use the learning management system of the MOOC but downloaded its content and used Canvas only for end-module test-taking. This was possibly due to students' negative experience with distant educational solutions during the pandemic or the portability of the data. Participants' comment and feedback were positive: they highlighted the lifelikeness and taboo-framing function of the course. However, it must be added that the slippery and sometimes brutal content, especially videos, were shocking for some.

### **Summary**

The representations of sexuality are deeply embedded in our everyday life. Sexuality is present in global social and political debates, and practically speaking, no adults or children could avoid facing with it. Our research group recognised the necessity for institutionalised sexual education and that is why its members mapped Hungarian parents' and kindergarten teachers' views on this filed with qualitative research methods. Based upon the results it was possible to develop a MOOC for tertiary education to prepare the upcoming generation of the Hungarian kindergarten and lower-primary teachers in a politically polarised context.

Results similar to the international ones confirmed that interviewees of the samples had self-contradictory ideas; even the same person could have traditional and progressive attitudes in the same topic. Similarly, participants were mainly familiar with the modern principles of sexual-pedagogy; however, maybe due to their socialisation, they did not follow them. The sensitive and taboo nature of the sexual education was detected in different signals of verbal and non-verbal communication. Uncertainty was quite typical in the case of specific subtopics, both parents and kindergarten teachers suffered from being abandoned and not having practical tools for handling different sexual-related problems. One was rather remarkable in connection with childhood sexual abuse: badly informed parents tended to create a dream-world without outer dangers threatening their children.

We strongly believe that education and prevention together should establish childhood sexual education; similarly, real communication among the different actors of sexual education should be inevitable. Our developed and piloted MOOC reflected the same vision, and it could fill a gap. The syllabus and the learning-management system are suitable for later enlargement or modification, even to be adapted to different languages.

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## **Fifth strand**

**Digital technologies to make teacher  
education programmes international  
and intercultural**



# **The support teacher and the use of inclusive teaching technologies. Some evidence from the schools of the Abruzzo Region during the Covid-19 pandemic**

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## **Abstract**

The impact of the Covid-19 pandemic in schools, in particular the transition from face-to-face teaching to remote or blended teaching, has been one of the most developed themes in pedagogical research. This study, carried out in schools of all orders and grades of the Abruzzo Region in collaboration with theUSR, involves 117 support teachers without specialization in service during the 2020/2021 school year. The results of an online questionnaire (<https://forms.office.com/>) found a lack of interaction between the support teachers and those on the common place with the school manager. We found some support teachers had difficulties in delivering synchronous metacognitive teaching and in producing digital contents. The average duration of online lessons was quite short, about an hour. Problems with remote interactions between the students with disabilities and classmates were also reported. Our aim was to develop a systematic reflection on the training of teachers in inclusive technologies starting from the direct testimony of those who, in a period of serious criticality, faced the complex professional role of support teaching.

Keywords: inclusive technologies; support teachers; teacher training

## Introduction

Training of teaching staff in the use of new digital and inclusive technologies (Herman, 2013; Lisnawati, 2021) has been made particularly urgent by the Covid-19 pandemic (Isidori & Ciraci, 2017) which has imposed suspensions of the face-to-face teaching activities or required the support of this activity with online interventions (DiD), or especially in the most critical periods of the emergency, to the only remote mode (DaD) (Crawford et al., 2020). The crisis caused by the pandemic is unique, and we are aware that even in previous education emergencies it has taken years for students to recover the learning they have lost (Meghjani, 2021). Education Technologies (ICT) can ensure enabling functions for basic activities for the school experience, which otherwise could not be performed by some students with specific learning disabilities or differences. ICT, in other words, can support functions for advanced teaching for the entire class, through the potential of the network (Cottini, 2018; Isidori, 2015).

In various studies, and over the years, the advantages and disadvantages of distance learning have been emphasized. Keegan (1980), for instance, presents key aspects of distance learning, by emphasizing several essential elements such as physical separation of teacher and learner, usage of technical media, and communication of teacher and learner. According to him, distance education is an educational experience where instructors and learners are separated in time and space, which means that the process happens away from an academic institution. On the other hand, Downes (2005) introduces the term *e-learning 2.0*, criticizing the traditional vision of e-learning based on the transmissive and hierarchical conception of knowledge and arguing that learning comes before all conversation, storytelling, sharing; it takes place in the global space of the web. Bates (2018) emphasizes that in today's digital age, online learning, blended learning, social media, and open learning are critical developments for an effective teaching. However, to trace a brief evolution of the models, it is possible to say that the Multi-media Model and the Tele-learning Model have been characterized by a "heavy" use of communication technologies (audio and video conferencing and broadcasting). Access to information via the web marked the transition to the so-called *Flexible Learning Model* (Terrazas-Arellanes et al., 2019). The result is a wide range of teaching strategies, also attributable to the constructivist theories of learning (Giaconi, 2008), which place the learning subject at the center. These are teaching-learning processes that not only go beyond the mere memorization and repetition of the contents but undermine the very assumptions of individual learning making it instead a collective act, an experience of dialogue, and a negotiation of meanings

and reflection (Novak, 1998).

From these considerations, it follows that a different conceptualization of learning, and of the role attributed to learners and teachers, has had (and has) profound implications and repercussions on the achievable learning objectives, and on the contribution of technologies in achieving these objectives (Salem et al., 2020). Technological innovation alone, even if it were “accomplished” (in the limitation of its being, as mentioned, in constant evolution), does not correspond *tout court* to inclusive educational innovation (Bocci, 2019; Bocci & Bonavolontà, 2020). Teachers had to adapt very quickly to this new reality, also finding innovative ways to conduct teaching in the most effective way. The current situation requires teachers to have increasingly solid and widespread methodological and digital skills together with critical thinking and an ethical-social capacity (Calvani, 2013; Pokhrel & Chetri, 2021; Poroçani, N., & Lumani Zaçellari 2022). It is in this context that our survey was conducted at the schools of the Abruzzo Region<sup>1</sup>.

### **The Survey**

The sample examined is composed of 117 teachers at schools of all orders and degrees of the Abruzzo Region. As stated in the introduction to this work, these are teachers in service on support without specialization for whom the USR Abruzzo has planned continuous training actions. In the group, 94% are women, and only 6% are men. With respect to the years of service provided, 55.2% of the subjects have been serving for less than 5 years, 19.8% between 5 and 10 years, and 7.8% have been in service for over 10 years. Within the sample, 15% of the subjects serve in kindergarten (16 subjects), 45% subjects in primary school (53 subjects), 24% in lower secondary school (28 subjects), and 16% in upper secondary education (19 subjects).

### **Material and Methods**

At the beginning of the 2020/21 school year during the second wave of the Covid-19 pandemic, teachers were distributed a self-completed and anonymous questionnaire with assisted administration. The questionnaire, structured with multiple choice answers, consists of 24 items, with a “funnel

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<sup>1</sup> The regional summary data (USR Abruzzo) indicates 5036 support teachers for the 2019/2020 academic year of which 2932 specialized and 2104 non-specialized, while the students with psychophysical and sensory disabilities are 6735 in all orders (3,055 childhood and primary, 1531 secondary, 2149 secondary).

sequence". Following a pilot administration (pre-test), it was disseminated via Moodle, and required a maximum completion time of 8 minutes. The instrument consists of two main parts: the first part concerns descriptive data such as sex, years of service, school grade in which the teacher serves, and possession of specializations. The second part includes a section focused on topics related to the didactic dimension. In particular, participants were asked about the following the planning of educational activities for the student with disabilities and the interactions involved; the duration of the lessons and the type of platforms used at school (Google Suite for education, Office 365, Educational Moodle, Edmodo, Fidenia); the difficulties encountered in the provision of digital teaching, and the personalization and simplification of the material to be proposed to the student with disabilities in relation to the so-called *individualized educational plan* (PEI); and how to find the teaching materials used in DaD with the students.

## Results and Discussion

With reference to *educational planning during the pandemic phase and teamwork*, 37.1% of cases identified difficulties related to the interaction with students with disabilities. With particular reference to the strategic curriculum, 33.6% of cases identified difficulties in providing metacognitive teaching; 20.7% of cases had difficulties in producing digital content, while in 27.6% of cases there were difficulties attributable to the interaction between the student with disabilities and classmates. In the national context, the remote teaching interventions proposed by the class support teacher in 26.2% of cases proved ineffective; in 10.3% of cases, the student's Individualized Educational Plan (PEI) was not compatible with remote teaching. The teaching materials proposed in DaD to the entire class were usable by learners with disabilities in just over a quarter of the cases (26.9%); in 84% of cases, it was the support teachers who activated interventions in DaD with pupils with disabilities, but only in 16% of cases the interventions were designed, proposed by curricular teachers (ISTAT 2020).

In our study, the support teachers communicated with both the pupil with disabilities and the family (in 60.3% of cases), but only in 19.8% of cases the support teacher interacted with the teacher on a regular basis, and in 19.0% of cases with the school manager. Also from our survey, in reference to the *digital mediation used for the realization of lessons*, teachers indicate Google Meet, in 74.5% of cases; Zoom in 20.8% of cases. The rest is distributed between Cisco Web and Skype, while 37.1% of subjects say they have not realized it. With reference to the *teaching material for Dad and DiD* it is shown that teachers indicate the design and implementation of structured

didactic cards (50.0%), YouTube videos (45.8%), digital concept maps (39.8%), and textbooks common to the classroom context (29.5%). In any case, the average reported duration of the lessons is short, about an hour (40.5% of teachers indicate this time frame), at most two hours (25.9% of teachers); 23.3% of teachers indicate an average duration of 30 minutes. There are no critical issues in the customization and simplification of the material to be proposed to the student with disabilities, in relation to the PEI (only 12.9% of cases report them).

<b>Gender</b>	Men	6%
	Women	94%
<b>Years of service</b>	None	
	Between 1 and 5 years	55,2%
	Between 5 and 10 years	19,8%
	More than 10 years	7,8%
<b>School grade</b>		
	Kindergarten	15%
	Primary School	45%
	Secondary of the first grade	24%
	Secondary of the second grade	16%

Table 1. Ascriptive Data

<b>Difficulties in providing metacognitive teaching</b>	33,6%
<b>Difficulties in the remote interaction between students with disabilities and classmates</b>	27,6%
<b>Difficulties in producing digital contents</b>	20,7%

Table 2. Difficulties in the remote inclusive teaching

<b>YouTube videos</b>	45,8%
<b>Digital concept maps</b>	39,8%
<b>Textbooks</b>	29,5%
<b>Structured didactic cards</b>	50%

Table 3. Teaching Materials for Dad and Did.

## **Conclusion**

UNICEF indicates for 2020 that more than 168 million children have lost a full year of education due to COVID-19-related lockdown measures. The partial or total closure of schools has repercussions especially on vulnerable and marginalised children, as it aggravates the existing disparities within education systems and alters all aspects of their daily lives. For example, the closure of schools has exposed children to increasing violence, abuse, and exploitation even in the domestic sphere, not to mention harm done by low levels of attendance (Lucisano, 2014).

A fundamental prerequisite to the constructive conduction of lessons is the training of teachers in inclusive practices, on didactic support (D'Alonzo, 2017). As we have seen, the data in Italy are not particularly comforting since the regional data (USR Abruzzo) indicates 5036 support teachers for the academic year 2019/2020 of which 2932 specialized and, unfortunately, 2104 non-specialized.

At any rate, we see that digital learning becomes a necessity in the newly created situation: it must provide a balance between synchronous and asynchronous activities according to the paradigms of mixed learning already tested, among others, by Garrison and Kanuka (2004), and Picciano et al., (2013), and the experimentation of a dual system (oral explanation and digital interventions) often adopted at the university level. Attention must be paid to the presence of a digital infrastructure able to make distance learning activities sustainable. For this reason, we insist on an adequate construction of internet lines and updated digital tools. In addition, the involvement of the teachers in designing the curriculum is of a vital importance because they are the first actors to diagnose the problems and identify the means to avoid the recurrence of these problems. Moreover, it is crucial to maintain the collegiality and efficiency of the relationship with the university to ensure smooth shifts from school to university by having common digital communication strategies and digital didactic platforms.

The pandemic showed the historical weaknesses of our school, weaknesses in the field of teacher training, their digital skills, digital infrastructure, inadequate initial training, and service of teaching staff regarding the use of ICT, inadequate quality of network connection, lack of coordination of work in the hierarchical perspective led to a qualitatively poor and chaotic education. In the face of an overall positive assessment made by teachers or even representatives of institutions regarding the activation of our school in emergency conditions, the results were not very satisfactory and large empty spaces appeared which need immediate

intervention to improve school effectiveness (Poroçani, N., & Lumani Zaçellari, M. (2022).

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## **Interactive Whiteboards as Support to Dialogic Teaching?**

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## **Introduction**

Digital competence is, in the current Norwegian curriculum, one of five basic skills, and ICT should be used to promote learning in all subjects (Kunnskapsdepartementet 2019). Consequently, digital infrastructure is present in all schools. Investments in computers, tablets, Wi-Fi, digital learning platforms and interactive whiteboards are massive and have placed the Norwegian schools as the most technology-heavy in Europe (Krumsvik, 2014).

Despite massive digitalisation of Norwegian classrooms, there is a great deal of discussion about the extent to which the use of ICT leads to enhanced learning (see for example, Wikan, Faugli, Mølster & Hope, 2009; OECD 2015). Some, like Klausen (2021), claim that there is a substantial technology optimism among the Norwegian educational authorities as well as the teachers. On the other hand, for instance Skagen (2014) questions the learning outcome. He asserts that digitalisation contributes to a ‘de-didactization’, because in the digital classroom the teacher is deprived of control over the teaching process. This is mainly due to the students' use of individual computers, tablets and mobile phones and the increasing use of digital exams, according to Skagen.

In this article, we look at another type of artefact which is not meant for individual use, namely the interactive whiteboard (IWB) and how it is used to support teaching and learning in the classroom.

## **Theoretical framework of understanding of learning processes**

The importance of dialogue and talk in learning processes, even in digitalized classrooms, is emphasized, for instance by Hennessy (2008). In this article we will especially address a group of British scientists with Neil Mercer (2019) at the forefront. He became interested in how the spoken word was used to create shared knowledge and understanding in the classroom. The implications of emphasizing talk in teaching are great, he believes:

In the everyday talk of classrooms, knowledge gets constructed, presented, received, rejected, evaluated, understood, and misunderstood. People's life chances may be affected by the outcomes. A careful examination of how this is done should tell us something of psychological interest and practical educational value. (Mercer 2019, 2).

To really take advantage of the learning opportunities in the classroom dialogue, students need to learn to talk in an evolving way, according to Mercer and his colleagues (Mercer, Warwick, Kershner and Staarman 2010). They introduce the notion of dialogic *space* to frame a classroom climate

which is supportive of thinking and interaction. In such a physical and social space chances even for thinking together occur – ‘interthinking.’

Two concepts support the concept of dialogic space (Mercer et al., 2010). One is the Vygotskian concept Zone of Proximal Development, ZPD (Kozulin 2003). The most common understanding of the ZPD is that it constitutes the difference between the children's current level of performance in schoolwork and the level they would be able to manage with support. According to Kozulin (2003), ZPD is also used by Vygotsky in a different context, namely, to explain how children's psychological functions develop. The third way Vygotsky uses the term is to consider ZPD as a metaphorical space in which the child's spontaneous concepts meet scientific concepts, concepts that are mediated by the teacher or others (Kozulin 2011). It is perhaps both this last understanding and the first, most common understanding of ZPD that Mercer and his colleagues are referring to.

The second term that Mercer et.al (2010) use to describe the dialogic space is the Intermental Development Zone (IDZ). This zone is the communication space that must be established between teacher and student and between students for learning to take place (Mercer & Littleton, 2007). For a teacher to teach and a student to learn, they must use talk and joint activity to create and negotiate this shared communicative space, the IDZ, which is built from the contextual foundation of their common knowledge and aims. In the ‘bubble’ of this Intermental Development Zone, which is constantly reconstituted as the dialogue continues, the adult and the child negotiate their way through the activity in which they are involved (Mercer & Littleton 2007, p. 21.)

To foster this kind of dialogue, the way the teachers pose their questions makes a difference. The teacher's questions can be described as either authentic, i.e., open questions to which the teacher does not have exact answers, or inauthentic, i.e., questions where there is a conclusion (Nystrand, 1997). For a dialogue to follow the initial question-response-evaluation (IRE sequence (Bellack 1996), depends on whether the teacher values the answer she receives, is happy to repeat it and asks the student to use it, and whether the teacher herself moves on to the answer and perhaps comes up with new challenges for the students (Dysthe, Bernhardt, & Esbjørn, 2012). To be able to utilize the dialogic space, the teacher must conduct dialogic teaching (Wølner, 2014).

According to Mercer et al. (2010), “in dialogic teaching the teacher:

- gives students opportunities and encouragement to question, state points of view and comment on ideas and issues which arise in lessons;
- engages in discussions with students, which explore and support the development of their understanding of content;

- takes students' contributions into account in developing the subject theme of the lesson and in devising activities which enable students to pursue their understanding themselves, through talk and other activity;
- uses talk to provide a cumulative, continuing, contextual frame to enable students' involvement with the new knowledge they are encountering;
  - encourages the children to recognise that talk is not merely the prosaic chat of everyday life but is a valuable tool for the joint construction of knowledge." (Mercer et al., 2010:369-370).

Not only the way the teacher asks, but also the way the children talk makes a difference. Three types of classroom talk are identified by Mercer et al. (2010). In the *disputational talk* the pupils are competing rather than sharing and building on the contributions of the others. The two other types of talk are characterized just by sharing information and ideas and taking the input of others into account, for instance during brainstorming -*cumulative talk*. In addition to sharing and taking each other's ideas into consideration, the *exploratory talk* is also critical as well as constructive.

Mercer & al (2010) found in their studies of science lessons that a potential for underpinning exploratory talk existed in the IWB classroom. A condition was that "talk rules' for conversation and collaborative reasoning" had been established (Kershner, Mercer and Warwick, 2010 p. 381). The rules are about listening to, respecting, and using information from others. All participants, students, and teachers must know and obey these rules.

### **Methodology**

The objective of this investigation is to look at how IWBs are used to support dialogic teaching.

We chose to study the use of IWBs because this technology is different from individual digital artefacts such as computers, tablets, and cell phones. An IWB is an artefact for whole class teaching and is marketed as an item that supports interactive learning (Mildenhall, Marshall & Swan, 2010). However, some researchers question this and claim that it is the pedagogical knowledge of the teacher that is the crucial factor, not the board (Twiner, Coffin, Littleton & Whitelock 2010; Wikan & Mølster, 2010, Bennet & Marton 2010; Digregorio & Sobel-Lojeski, 2009 - 2010; Smith, Hardman & Higgins, 2006; Warwick, Hennessy & Mercer, 2011).

Our research questions in the present study are: How are teachers using the IWB? How instrumental is the IWB in supporting dialogic teaching in a whole class setting?

This is a qualitative study that was conducted in two phases. Invitation to participate in the study went to our teacher education partner schools. The teachers who said yes to the invitation worked from 1st to 10th grade. Both male and female teachers were present, but in the text we will, for reasons of anonymity, refer to everyone as she and her, since women were in majority. The teachers who volunteered proved to be relatively confident in the use of IWB, some also with long experience and training in the field. In all classrooms, the student group was multicultural / multilingual, in some classrooms more than others. All classes also had students reported to have special needs for support.

In phase 1, we observed lessons and interviewed seven teachers in seven different classrooms at five primary schools and one lower secondary. We developed an observation form. Short audio and video recordings as well as photos from class - without the students' faces being shown - were also included to support memory. Short interviews with the teachers were made before and after class. The conversations were recorded on tape and transcribed

In phase 2, we challenged four of the most competent IWB users to explore whether the interactive whiteboards could contribute to promoting more exploratory and cumulative talks in the classroom. Teachers and researchers came together to develop the use of board, inspired by the action research and 'participatory research' tradition (e.g., Carr & Kemmis, 1986; Denzin & Lincoln, 2008).

Theory and classroom examples from the literature were discussed together, especially the English research results on IWB and the dialogic space mentioned above. Then the teachers suggested that they individually should plan a lesson that we observed. The emphasis was on the utilization of the IWB as an artefact to promote dialogue. Data collection in this phase consisted in addition to observation data and interviews, the teachers' planning notes, and 'notebook'. Transcribed interviews and recordings from the classes and meetings were, together with observation data and the other collected material, analysed and categorized. At the end of the project, we had a focus group discussion with all participants to share and discuss experiences together. The teacher participants were given the opportunity to provide feedback on the summaries written by the researchers. See Nes & Wikan (2013) and Wikan & Nes (2015) for further details and discussions on methods.

## **Presentation of findings**

We will discuss our findings in in the following way. First, we present how the teachers value the IWB as a learning artefact, then what type of talks we observed. Lastly, we show some examples were the IWB was used to support exploratory and cumulative talk.

### *IWB as a teaching artefact in the classroom*

All our participants valued the IWB as an artefact for teaching and learning. However, for all it had been a process to get used to the board and develop the technical competence, a process that often seemed to have been the responsibility of the individual teacher, with little support. When the IWB was first installed, the teachers were sceptical because they felt it would increase their workload. Their attitude has changed: "Now I cannot do without the IWB", said a teacher who would soon retire. She believed that the unifying and engaging function of the board is invaluable. "I use Smartboard every single day," said another, "it brings students together more than anything else," and from a third: "The IWB is priceless as a focal point." In these lessons the teacher used the board to illustrate, to challenge and to write on, and as a starting point (and sometimes as a rewarding ending point) for assignments and conversations.

The teachers said that the IWB seemed to capture the attention of the young students very well, so fewer go astray during class. This statement is supported by our observations. In all the lessons we observed, the students were very attentive. Even the youngest students were able to be fully concentrated for more than 20 minutes (Wikan and Nes 2015). We saw no examples of students using their private mobile, i-Pad or similar in class, nor other distracting items. In other words, they used 'time on task'.

One other advantage of an IWB was the opportunities to pre-store material that they had made for the teaching and to store what was noted throughout the class. This technical option made it possible to start the next class by taking out what they did last, and it was also possible to upload the notes on the learning platform. Yet another advantages some teacher mentioned was it made it easy to vary the teaching.

### *Type of talks in the classroom*

Type of talk is essential to create a dialogic learning environment according to Mercer (2010). Inspired by Mercer we categorized the dialogue between teacher and students and between students and student in three

categories, the exploratory talk, the cumulative talk and the disputational talk.

We did not observe disputational talk. Mostly we observed cumulative talk between the students (Wikan and Nes 2013). We observed that they listened to each other's arguments and suggestions, but that they did not discuss much (Nes and Wikan 2015). It was in the action phase of the project that we observed most often that the teacher intended to create a situation that fostered dialogic teaching.

One teacher (3rd grade) told this:

Whenever I work with the IWB, I ask the children to explain to the class or to their friend how they are thinking about the answer they are about to give, especially in the case of mathematics. Since children think and explain in different ways, listening to others may cause new insight - Eureka!

Here, the potential of the student community was deliberately exploited by the teacher. One could also envision a further dialogue in which students and teachers asked follow-up questions about the different ways of thinking that were uncovered. It is precisely such a training in developing talk that Mercer and his colleagues want to stimulate.

As the example above illustrates, it is essential that the teacher is aware of her responsibility to stimulate talk in the classroom. The teacher asked authentic questions to the students, and the answers were appreciated by the teacher and in some cases also followed up in plenary (cf. Mercer, 2000; Dysthe et al., 2012). The talks both in whole class and in the groups led to a listening and exploratory dialogue, although the short duration of the dialogues made a longer follow-up of the topic impossible. There was hardly enough time to develop an actual intermental development zone, IDZ (Mercer & Littleton, 2007).

#### *The IWB and exploratory and cumulative talk*

Below we will illuminate this question with two rare examples, one in grade 5 and one in grade 10 where the IWB was utilized to scaffold cumulative and potentially exploratory talk.

In one lesson 5<sup>th</sup> graders explored the issue of poverty in different ways, initially through images on the IBW, followed by questions which the children discussed in pairs. In the following plenary session key words from the children were written on the board. A lot came up from the eager children, and sometimes short whole-class dialogues followed. In a discussion with teachers *afterwards* about this sequence *of the* lesson, the teachers highlighted the importance of the *talk* rules which they had worked to

establish for a long time. The rules were mainly about listening to each other, respecting the views of others, and avoiding negative body language.

This example illustrates the point that the students must be able to feel confident that they should not be ridiculed or otherwise rejected when they make suggestions. This is something several authors have pointed out; Pierce & Gilles (2008) talks about a 'culture of talk' in class. The teachers also argued that the pupils' conversations with learning partners in small groups before the plenary session was useful during this lesson, not least because several students in the class did not know Norwegian very well. The teachers said that the students became more confident in speaking aloud in class when they had talked about the topic in groups first. In this case, it seemed that talk rules in combination with the learning partner system created a climate for 'interthinking' and cumulative talk, and where perhaps sometimes exploratory dialogues could also take place (Wikan and Nes 2015).

In grade 10 the IWB in a classroom was used by the teacher to create a learning setting that might simulate explorative talk between the students as the following case illustrates:

In a social studies lesson in the 10th grade, the students were active on the board in the following way: The theme was everyday life in occupied Europe during World War II. As part of a larger program, texts were read, and film clips were shown at the IWB to stimulate students' reflections on how being at war. First, the students wrote down their ideas individually, then they shared their thoughts in a group. After the group discussion, a student from each group wrote key words they had agreed on, on the IWB. The key words contained both facts and emotions, e.g., "Controls in the streets" and "do not know what awaits them", "constant fear". All the key words were followed up by the teacher through a question and a short plenary dialogue. The texts on the board were saved for later use.

In this sequence, the students were given open-ended questions without definitive answers, and they were able to come up with their own ideas in the groups. They listened to each other and commented on each other's posts (cumulative conversation), and there were also shorter approaches to an exploratory dialogue.

In the example above, the teacher had created a difficult task and asked an authentic question. We observed how a group of students discussed, listened, and argued. They built on each other's knowledge and arguments. This was a rare example of a lesson where the interactive potential of the IWB was used to stimulate cumulative talk and inter-thinking, and moments of exploratory talk. However, the whole class talk probably had more potential for a deeper exploratory dialogue if more challenging questions had been posed and pursued in the follow-up conversation. Even so, it is fair to

say that in this specific situation, the interactive opportunities in the board were used by the teacher to scaffold a dialogic space.

These two lessons could have been completed without the use of IWB, but a main reason for the teacher to use the board was the multimodal possibilities, i.e., the ability to display images, sound, film, and text on a single medium. Hence, the IWB was handy, but not instrumental in scaffolding cumulative and exploratory talk in the classroom.

### **Discussion**

The participating teachers were happy to have an IWB installed in their classrooms. They all agreed that the IWB made it easier for them to differentiate the teaching. This is especially useful when working with students who encounter language barriers and students with learning disabilities. The board is an all-in-one technology; it brings together many of the activities and functions that teachers use to vary teaching in one tool. The teachers felt it was an advantage because it created flow and calm over the class.

In all observed lessons, shorter sessions of group work or work in pairs occurred. In these sessions and in the following whole class follow up, we could argue that the shared communicative space of an intermental development zone (IDZ) was present. This zone characterizes the dialogic space. We also could argue that for instance when the students shared different ways of thinking mathematical solutions, as in one of the cases above, some students could expand their ZPD.

According to Mercer et al. (2010), in dialogic teaching the teacher should encourage students to state their point of view, inspire discussion between students, and take students' contribution into account in developing the subject. We observed only short sequences where this was happening. One barrier to a more extensive dialogic space might have been the type of questions often asked by the teacher. The questions were typically of lower order (inauthentic), and the conversation followed the well-known pattern initiation-response-evaluation (IRE) (Bellack, 1966).

When the part played by the IWB is concerned, our main finding is that even if IWBs to some extent were used to support a dialogic space, it was rarely instrumental in supporting cumulative and exploratory talk between the students or between teacher and students.

Mercer (2010) finds that the technology like an IWB might be useful in stimulating dialogic space and a tool for joint construction of knowledge. Admittedly, in phase 1 we observed dialogues where authentic questions were asked and discussed, but not in connection with IWB. During the

observations, it was technology-supported teaching using IWB that we observed most of. In most lessons we observed it was the teacher that controlled the board, while the students were attentive recipients. In our data there is no trace of the teacher encouraging the children to recognise that talk is not just everyday talk, but even “a valuable tool for the joint construction of knowledge”, as recommended by Mercer & al. 2010 (p 370).

Nevertheless, everything considered, we conclude that the IWB has a positive influence on the learning environment. Even though an IRE pattern typically emerged in the IWB-supported teaching, the effect in the classroom was different from a typical IRE conversation. Teaching with the IWB seemed to help the students stay focused for a long time, the teachers confirm. Especially for young students the teachers emphasized that being able to move and walk and touch the board made the students concentrate. Some teachers emphasized that this really applied to all students, not just the youngest, including those who were otherwise quite passive or struggling with learning.

The teachers believed that it was precisely the quality of keeping the concentration of all the students over a long period of time that was the most important advantage of the board. It is interesting that we never observed that the students used for instance their smartphone or computer for private activities when the interactive whiteboard was in use. This is something that is otherwise often highlighted as a major problem in Norwegian classrooms (Krumsvik, 2014; Skagen, 2014). In our study the IWB did not contribute to ‘de-dactization’, but rather to giving teachers didactic control, in contrast to what Skagen (2014) finds when it comes to certain other forms of technology. The digital technology that the interactive whiteboard represents in the classroom is not comparable to computers, tablets, or mobile phones. The latter are mostly intended for individual use and often lead to students being tempted to engage in non-academic activity on the digital medium. The interactive whiteboard supports the classroom as a learning community to a much greater extent than the individual artefacts. You may on the other hand ask whether there is a risk that didactic control using the IWB is being exerted at the expense of a genuine dialogic space.

The IWB is an artefact that might be used to scaffold dialogic space, but the technology competent teachers we observed rarely used that option. Why is that? Egeberg and Wølner (2011) claim that that the bottleneck is the teacher’s didactic and pedagogic competence, not necessarily their lack of digital competence.

This has implications for how we educate teachers to become professionally digitally competent. The TRACK model refers to the teachers’ needs for combining technology, content, and pedagogical

knowledge (Kurt 2018). For instance, the teachers we studied probably would have profited from a better understanding of the theory underpinning dialogic space and how to implement the theory in a digital classroom.

A framework for professional digital competence is developed for teachers in Norway too (Kelentric, Hellend and Arnstorp 2017). Like in TRACK, content and pedagogical competence areas are listed, but rather than technological skills, the described professional digital competences include issues of for instance ethics, communication, and leadership. A corresponding curriculum is presently being implemented in the general teacher education programme in Norway. Dialogic teaching is not specifically mentioned in the teacher education curriculum on professional digital competence, but in our opinion dialogic teaching is essential in this competence. This kind of pedagogical knowledge is fundamental for the professional digitally competent teachers, as well as knowledge of subject didactics relevant to the practice of their profession in a digital environment (Kelentric, Helland og Arnstorp, 2018).

Even with the wide approach to professional digital competence described above, a pitfall is that the understanding of teaching abilities in the digital classroom may be reduced to mainly technical competence, contrary to the intentions. Therefore, trailing research of the implementation of the curricular guidelines on professional digital competence in Norwegian teacher education would be welcomed.

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# Towards an inclusive learning experience: proposing a checklist to assess digital textbooks

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## Abstract

We describe a checklist to be shared with teachers and editors for assessing features that contribute to the usability and accessibility of digital textbooks. These are organised in five main dimensions. These dimensions are: *Customisation*, as the ability to adjust how content can be presented to agree with individual needs; *Multimodality*, to allow for the use of different media to represent the same content; *Format*, to describe how presentation supports the semantic of the content; *Accessibility*, listing elements of assistive technology to make content available to all; and *Training*, to describe how the interactive elements of the textbook are helpful in order to promote self-assessment. This checklist offers teachers an easy-to-use tool for evaluating textbooks when deciding on their adoption while stimulating the discussion on usability and accessibility, essential for an inclusive learning experience in this community. The five dimensions are based on existing literature and are tailored to the specific needs of the targeted teaching community. Therefore, in this paper, we start by describing the state of the art, then discuss data gathered previously with an initial pilot, and end by fully describing the proposed checklist and its dimensions.

Keywords: digital textbook; e-schoolbooks; inclusion; accessibility; checklist; multimodality; learning; special educational needs

## Introduction

The 13 December 2006 Convention on the Rights of Persons with Disabilities (CRPD) was adopted by U.N. General Assembly, and it entered force on 3 May 2008. Today, it has been ratified by 185 Countries (UN, 2022). Article 9 of this treaty declares: ‘States Parties shall take appropriate measures to ensure to persons with disabilities access, on an equal basis with others, to the physical environment, to transportation, to information and communications, including information and communications technologies and systems, and other facilities.’ Moreover, article 24 of the same document asserts: ‘States Parties shall enable persons with disabilities to learn life and social development skills to facilitate their full and equal participation in education and as members of the community. [...] Ensuring that the education of persons, and in particular children, who are blind, deaf, or deafblind, is delivered in the most appropriate languages and modes and means of communication for the individual’ (UN, 2006). Furthermore, in the Agenda 2030, concerning the Goal 4 - aimed to ensure inclusive and equitable quality education – the U.N. promotes an entirely free, equitable and quality primary and secondary education leading to relevant and effective learning outcomes, 'education facilities' and 'safe, non-violent, inclusive and effective learning environments for all' (UN, 2015a). Moreover, in the Qingdao Declaration, UNESCO affirms: 'Technology offers unprecedented opportunities to reduce the long-existing learning divide. The application of I.C.T. is essential [...]. We commit to ensuring that all children have access to connected digital devices and a relevant and responsive digital learning environment by 2030, irrespective of their disabilities, social or economic status, or geographic location' (UNESCO, 2015b). Unfortunately, nowadays, accessibility is not a widespread practice (Guedes & Landoni, 2020). Most schoolbooks show wide and varied multimedia accessories, such as videos, audios, visual dictionaries, and interactive exercises, but they are not fully accessible to all the students. In Italy, there are 8.106.952 students (MIUR, 2021). In 2021, the number of students with disabilities was 300 thousand (3.6%) (Istat, 2021). In addition, about 4,9% of the school population has either dyslexia, dysgraphia, dysorthography or dyscalculia (MIUR, 2019). Furthermore, 10,3% are students with a migrant background (MIUR, 2020), and some do not speak Italian fluently as described in Figure 1. Moreover, students have their own cognitive pace. Furthermore, managing the classroom is becoming more and more difficult as respect for social norms must be taught daily, and demotivation is a widespread attitude (d'Alonzo et al., 2013). From this perspective, this ongoing research project proposes to assess the

effectiveness of Italian e-schoolbooks in successfully involving every student in the learning process.

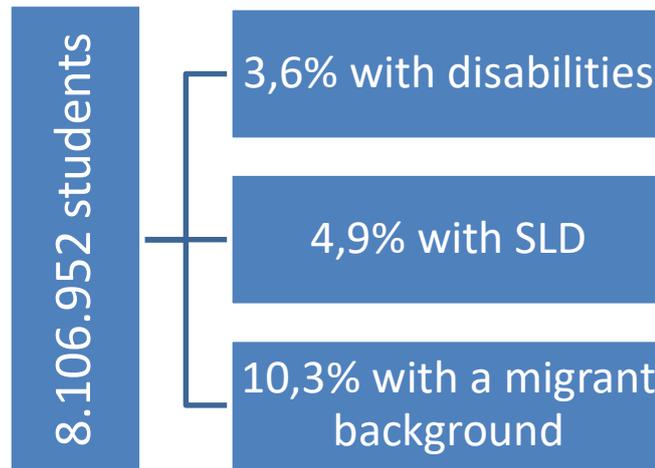


Figure 1. Number of SEN students in Italy

### **The survey**

We organised an initial pilot study and to gather a representative sample of qualitative and quantitative data, we invited Italian teachers to elicit their expert opinion and answer an anonymous survey about e-schoolbook. Answers were gathered online using a questionnaire containing six multiple-choice questions and twenty-three close ones, with Likert scale. Teachers were recruited through a chain-referral sampling method. One hundred participants – from all over Italy- took part in the survey. We assigned numeric values in the Likert scale a textual label examining its meaning. For example, 1 stands for “not important”, 2 corresponds to “slightly important” and 3 is equivalent to “moderately important” as in Table 1.

<b>RATING</b>	<b>DESCRIPTORS</b>
1	NOT IMPORTANT
2	SLIGHTLY IMPORTANT
3	MODERATELY IMPORTANT
4	FAIRLY IMPORTANT
5	VERY IMPORTANT

Table 1. values attributed to the Likert scale.

Participants belong to different school orders and grades. 26% of participants work in primary school, 38% in junior high school and 36% in high school. As for expertise, 53% of the sample has over 10-year experience, and 20% of teachers work from five to ten years. In relation to the teaching area, 38% of participants are special educational needs teachers, 23% teach Italian, History and Geography, 11% are specialists in Foreign Languages, and 11% teach Maths and Science as reported in Table 2.

<b>Teaching area</b>	<b>%</b>
S.E.N.	38%
Italian, History and Geography	23%
FL	11%
Maths and Science	11%
Art, Music, P.E., Technology	12%
R.E.	1%
<i>other subjects</i>	4%

Table 2. Teaching area of the participants.

Most of the answers have come from the Northern part of Italy (62%), but there has also been good participation from the South of Italy and its Islands (23%). Cronbach's alpha is 90. This coefficient of consistency is considered "reliable" in social science research situations. The survey contained a privacy notice and a declaration of consent.

### **Analysis and results**

The Likert scale questions in the survey have been designed to analyse five dimensions of the thematic area discussed above. Considering that schoolbooks are an essential tool for the learning process, we focused our attention on the following queries:

- RQ1: How important is to customise the text to meet individual preferences?
- RQ2: Is the use of different media necessary to address individual needs?
- RQ3: Should the presentation format support explicitly the semantics of the content?
- RQ4: Are some elements more critical than others in making content available to all?
- RQ5: Are the textbook's interactive elements effective to promote cooperative learning and self-assessment?

#### ***How important is to customise the text to meet individual preferences?***

Forty-nine percent of participants stated that it is very important that the page format must adapt automatically to the device used (pc, tablet, mobile phone). However, only 16% consider it very relevant that the text and background colours are editable. This last aspect is perceived as moderately important by 25% of teachers and fairly significant by 29%. On the contrary, 56% of the respondents asserted that it is very important that the text can be underlined and that both notes and bookmarks can be inserted on the page as in figure 2. Another significant factor is related to the possibility to customise the formatting of the page (margin, alignment, line spacing, font and font size): this element has been reputed as reasonably important by the 29% and very influential by the 25%, only the 2% of teachers disagree to the necessity to customise margin, alignment, line spacing, font and font size.

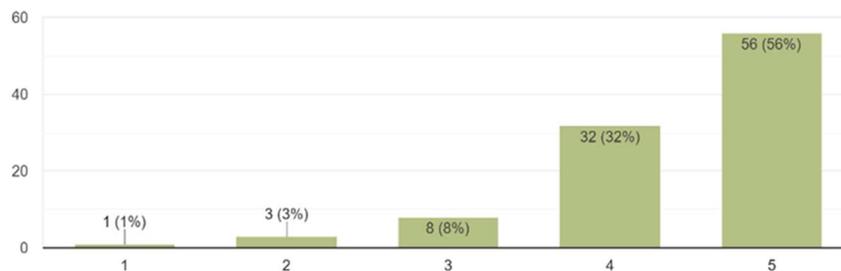


Figure 2. Answers relating the possibility to underline and insert both notes and bookmarks.

***How significant is the use of different media for addressing individual needs?***

Fifty-seven percent of participants thought that it is very significant that students, depending on their learning style, can perform activities and exercises in various ways. No responders stated that this item is irrelevant, but 56% stated that it is very important that on the page there should be pictures strictly functional to the understanding of the text (see fig.3). Moreover, 54% also claimed that it is very important that the same content is presented in various forms (e. g. in form of infographics, slides, and multimedia elements). As for the use of the book, 43% declared that it is very important for the reader to be able to choose how to browse the text according to its logical structure: by page, paragraph, chapter or by clicking on the index titles.

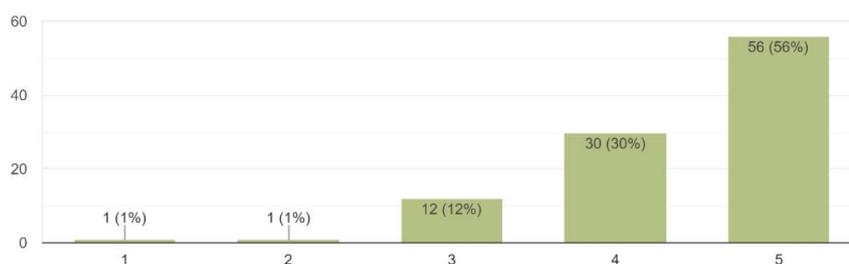


Figure 3. Answers relating the necessity to insert in the page pictures strictly functional to the understanding of the text.

***How important is that the presentation format supports explicitly the semantics of the content?***

As for the format, 56% declared that it is very important that keywords are highlighted in bold, and 39% also stated that it is very significant that headlines stand out clearly from the background of the page. It has been considered moderately important by 37% of responders to underline only the links on the page. Thirty-three percent thought this last factor was fairly important, and only 2% considered it irrelevant. Thirty-six percent stated that it should be very significant to have a skip-to-the-main-content button on each page, and 38% suggested, also, the necessity to put a link to the exercises. Fifty percent considered relevant the feature to download pages in different formats (doc and pdf). Seventy-four percent stated that it is very important that the text can be viewed both online and offline (see fig.4).

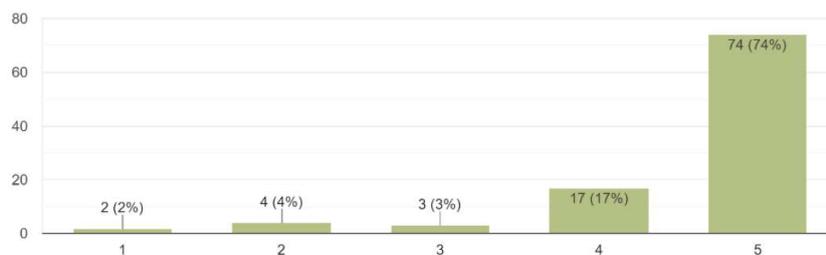


Figure 4. Answers relating the necessity to read the text both online and offline.

***Are some elements more critical than others in making content available to all?***

Regarding accessibility, 42% of the responders declared that it is very significant that audio tracks can also be used with a written transcript, and only 1% declared that this aspect is not important. Furthermore, 64% said that it is very relevant that pictures, maps, and tables must have captions and alternative text suitable for each student. Forty-six percent of teachers asserted that videos enabling accurate and synchronised subtitling is very important; no one considered this aspect not significant (fig. 5). Eighty-eight percent considered really significant the possibility of using the book with screen readers and with text-to-speech software. In addition, 74% of responders declared that the availability of a description sheet containing

information on the accessibility and inclusivity of the digital text could facilitate the choice of the book for the whole class group.

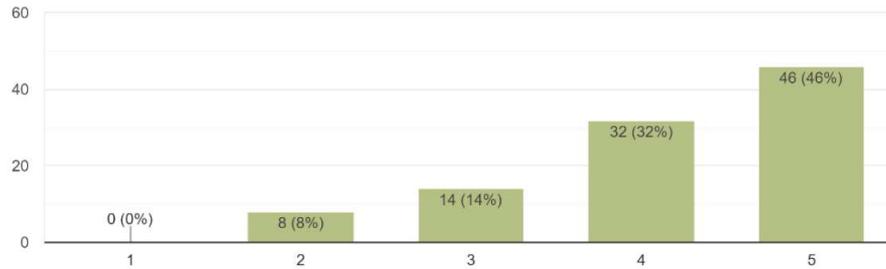
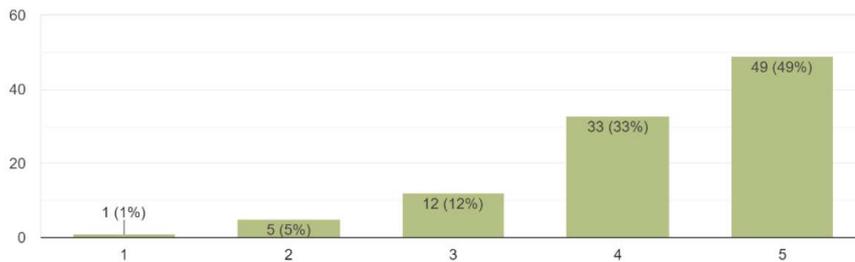


Figure 5. Answers relating to the need for accurate and synchronised subtitling in the videos.

***Are the textbook's interactive elements effective for promoting cooperative learning and self-assessment?***

As for the learning process, teachers agree to consider relevant the fact that exercises should be interactive and provide immediate feedback (see fig.6). Moreover, 95% asserted that it could be important to provide a report of the exercises and the results, but only 23% asserted that it should be very important that the results report can be downloaded or printed; on the



contrary, 36% of teachers said that this element is moderately important.

Figure 6. Answers relating to the perception of the importance of providing interactive exercises and immediate feedback.

### The checklist

From the results of above-mentioned survey, we extracted the factors and the related features to be accounted for when helping teachers select e-textbooks to support inclusion. Our proposed checklist is described in Table 3. This checklist could also be a useful tool for editors to better understand the features that make a textbook inclusive in respect to needs of individuals as well as those of the class. In this context a class is not simply the aggregation of different individuals to who one gives marks to but a group of people who achieves, through talks and cooperative work, cognitive goals, autonomy, and growth. As writer Daniel Pennac wrote, a class should not resemble a regiment but an orchestra (Pennac, 2014).

Numeric values have been attributed to the items of this draft checklist. In fact, “yes” stands for “1 point”, “no” corresponds to “zero point” and “partly” is equivalent to “0,5”. As the evaluation values range from 0 to 24 points, for the time, while waiting to collect more data and validate our checklist, we posit that a textbook achieving less than half of the available points cannot be considered inclusive. One that sits with a score in the middle range is acceptable, but only those getting from 20.5 onwards are expected to meet the needs of an inclusive class.

<b>CUSTOMISATION</b>	<b>YES</b>	<b>NO</b>	<b>PARTLY</b>
1) The page format is automatically adapted to the device used (pc, tablet, mobile phone);			
2) Text and background colours are editable;			
3) The page offers the possibility to customise the formatting (margin, alignment, line spacing, font and font size);			
4) The text can be underlined, and notes and bookmarks can be inserted.			
<b>MULTIMODALITY</b>	<b>YES</b>	<b>NO</b>	<b>PARTLY</b>
1) Students, depending on their learning style, can perform activities and exercises in a variety of ways;			
2) The same content is presented in a variety of forms (text, infographics, slides, and multimedia elements);			
3) Exercises' contents are presented in multiple ways (multiple choice question, cloze, matching, true/false, flashcards);			
4) The reader can choose to browse the text by page, by paragraph, by chapter or by clicking on the index titles;			

5) Pictures on the page are strictly functional to the understanding of the text.			
<b>FORMAT</b>	<b>YES</b>	<b>NO</b>	<b>PARTLY</b>
1) Keywords are highlighted in bold;			
2) Headlining comes out clearly from the background of the page;			
3) Each page contains a skip-to-main-content button.			
4) The download of the pages is provided in different formats (doc and pdf)			
5) The text can be viewed both online and offline.			
<b>ACCESSIBILITY</b>			
1) Audio tracks can also be used with a written transcript;			
2) Videos enable accurate and synchronised subtitling.			
3) Pictures, maps, and tables have captions and alternative text suitable for each student.			
4) The book can be used with screen readers and with text-to-speech			
5) A description sheet containing information on the accessibility and inclusivity of the digital text is available.			
<b>TRAINING</b>	<b>YES</b>	<b>NO</b>	<b>PARTLY</b>
1) Exercises are interactive and provide immediate feedback;			
2) A report of the exercises carried out and their results are provided;			
3) Many activities promote cooperative learning;			
4) All review sessions provide opportunities for self-assessment;			
5) Tutorial and videos are understandable for all.			

Table 3. A checklist to assess the inclusivity of e-schoolbooks.



Figure 7. QR Code to participate in the micro-survey.

## Conclusions

This exploratory study has provided us with:

- The definition of features that could make a digital schoolbook effective in managing the class from an inclusive perspective and a reflection on how some possible improvements can benefit every student's learning process.
- The design of an easy-to-use tool, the checklist, to support editors and teachers in the assessment of textbooks and teaching resources in terms of accessibility and usability according to the five dimensions listed above.

Our contribution could better support teachers to manage class complexity more effectively and improve the learning experience of students while respecting their individual needs. The above checklist could be an assessment tool for e-schoolbooks for an inclusive learning experience to be used by editors and authors, too. From this perspective, it will be very relevant to collect more feedback from different stakeholders to improve and validate the current version of the checklist. From this horizon, to continue the research, we warmly invite the scientific community to participate in the following anonymous micro-survey that consists of only two questions (as in fig. 7). As we believe that participatory research empowers all members of the teaching/learning community. The use and the impact of the checklist on the class will be explored in a future study.

## Acknowledgments

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# **E learning in Albania during, before and after the pandemic (Analysis of Albanian education)**

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## **Abstract**

This article describes research about the use of E-learning during the pandemic in the pre-university system in Albania. We explore how the government had prepared teachers for online teaching, how well teachers were prepared, and how they applied competencies for online teaching to their own instruction. We found that often E-learning is still very much based on face-to face didactic structures.

We distributed a questionnaire that asked for information on learning during the pandemic as well as about the digital competence of teachers and students, sources of information of teaching, tools and methods used in teaching. Our analysis and findings are from this questionnaire, as well from data taken such as Albanian and international experiences. We propose suggestions for new didactics in Albania. These proposals are already visible in other places in the world. These proposals combine traditional teaching with E-Learning, even in normal situations, as an opportunity and necessity to achieve more efficient teaching and learning.

The improvement of this situation requires an increased attention to the problems of education, both from researchers in the field and from government, the source of funding. World practices that include face-to-face instruction alongside online instruction provide a ready-made model that needs to be part of Albanian education. Had these practices been in place, Albania would have been better prepared for situations like that caused by Covid-19. Such a situation requires a change in the principles of organizing educational policies in Albania. Such a change involves a commitment from all relevant interest groups, including schools, universities, training bodies, and government.

Keywords: didactics, online learning, E Learning, competence, tools, applications, etc.

## Introduction

The pandemic we have been living with for so many months is a phenomenon that has affected every area of human life. It upset the balances at all levels, creating a new reality, often with negative consequences.

The world education system was challenged by this new reality. Since March 11, 2020, when the World Health Organization (WHO) declared that Covid had shifted from epidemic to pandemic level, and when such study centres as Johns Hopkins University<sup>1</sup> announced frightening prevalence figures and virus mortality, approaches to teaching and learning took a dramatic turn.

In line with the situation in the world, the Council of Ministers<sup>2</sup> made the decision to interrupt the educational process in Albania and closed schools. The immediate closure resulted in the need to establish online communication between teachers and students.

The learning process was moved from the physical environment of classroom and auditoriums to an online space, needing other modes of teaching and other tools for practice. Distance learning began. Given the fact that almost every Albanian family has close personal connections with the school, we claim that distance learning changed the traditional images of teaching. In this new learning process, the relationships between teachers and students changed, as did the role of families in education, and the actual didactics themselves

Online learning required a sufficient level of digital competence of both teachers and students.

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<sup>1</sup> L. Espino-Díaz , G. Fernandez-Caminero, C, Hernandez-Lloret, H. Gonzalez and J. Alvarez-Castillo, “*Analyzing the Impact of COVID-19 on Education Professionals. Toward a Paradigm Shift: ICT and Neuroeducation as a Binomial of Action*”  
[https://www.researchgate.net/publication/342938028\\_Analyzing\\_the\\_Impact\\_of\\_COVID-19\\_on\\_Education\\_Professionals\\_Toward\\_a\\_Paradigm\\_Shift\\_ICT\\_and\\_Neuroeducation\\_as\\_a\\_Binomial\\_of\\_Action](https://www.researchgate.net/publication/342938028_Analyzing_the_Impact_of_COVID-19_on_Education_Professionals_Toward_a_Paradigm_Shift_ICT_and_Neuroeducation_as_a_Binomial_of_Action)

<sup>2</sup> <https://qbz.gov.al/eli/urdher/2020/03/19/190/64109eac-346b-457a-b676-562fb70ea325>

## **Methodology**

To complete this paper, we looked at the current situation of training in Albania related to preparing teachers for online teaching. We looked at how training was supposed to take place, and how tools were supposed to be made available. We also collected information from teachers through a questionnaire to help us understand how well preparation had been completed

The analysis we are making through this method aims at:

- presenting some problems, which we consider products of social and educational emergencies, in which the entire world in general and the Albanian education system were found.
- describing the effective situation on the digital skills of teachers and to some extent students in Albania in the new didactic conditions during distance learning.
- critique the abilities of school structures in relation to the new method of learning, which is realized through communication technology.
- bring some ideas on the organization of the new didactics, its perception by the educational structures, the ways for its affirmation in the new virtual spaces and formats where the educational system entered in Albania.

The presented study can be considered as an attempt for information and orientation on distance learning (E-Learning), creating opportunities for implementation in schools and emphasizing its importance in teaching and learning.

## **International experience**

Appreciating international didactic achievements and experiences, it must be said that E-Learning is not an invention brought about by the pandemic. Rather, it has been experimented with and studied for years throughout the world. The European Community and respectively the European Training Centre (CEDEFOP), through the program E-Learning Action Plan: Designing Tomorrow's Education (2001), experimented with the introduction of new technologies and the Internet as a tool of a new didactics in teaching and learning. (Its definition of E-Learning can be found in this quotation: *“the use of new multimedia technologies and the Internet*

*to improve the quality of learning by facilitating access to resources and services as well as remote exchanges and collaboration.*<sup>3</sup>).

Since 1999, this centre and this program have conducted twelve surveys related to E-Learning, examining knowledge about technological support of learning, email in E-Learning, and skills of trainers in E-Learning<sup>4</sup>. In this context, in 2005 a questionnaire was launched in English, French, Italian and Spanish to see the impact of these trainings. Based on the collected data, certain issues related to this new type of didactics in teaching were identified.

Programs such as the Open Education Movement have been used in Latin American countries (and beyond). According to Ramirez (2013<sup>5</sup>) this is a commendable activity that promotes the democratization of education through open access to online training.

This whole program was preceded by MOOCs (Massive Open Online Course), programs that offered training courses to increase certain competencies needed for online learning. After the large-scale application of these MOOCs, it was seen that the impact on OER (Open Education

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<sup>3</sup>[https://www.cedefop.europa.eu/files/etv/Upload/Exchange\\_views/Surveys/Report\\_survey\\_Teachers\\_and\\_Learners\\_and\\_e-learning\\_final.pdf](https://www.cedefop.europa.eu/files/etv/Upload/Exchange_views/Surveys/Report_survey_Teachers_and_Learners_and_e-learning_final.pdf)

<sup>4</sup> Since 1999, Cedefop has conducted a series of 12 surveys about e-learning. The themes covered are : technology supported learning (2000, 2003 and 2004), E-mail in e-learning (2000), Trainers' skills for e-learning (2000), economics of e-learning (2000), e-learning and adult basic skills (2000), European trade unions and e-learning (2001), e-learning for people with disabilities (2001), Training of trainers and teachers (2001), e-learning Europe (2002) and what is the extent of e-learning in Europe (2002).

The reports that have been made of the results of these surveys can be found online on the ETV site

[http://www.trainingvillage.gr/etv/Projects\\_Networks/ELearning/survey/List.asp](http://www.trainingvillage.gr/etv/Projects_Networks/ELearning/survey/List.asp)).

<sup>5</sup> Competencias docentes y prácticas educativas abiertas en educación a distancia (eBook). México: Lulú. (<http://goo.gl/x0Dlh>) (15-02-2014)  
Retos y perspectivas en el movimiento educativo abierto de educación a distancia: estudio diagnóstico en un proyecto SINED. Revista Universidad y Sociedad del Conocimiento, 10, 2, 170-186. (<http://goo.gl/wqAc57>) (DOI: <http://doi.dx.org/10.7238/rusc.V10i2.1719>) (25-02-2014).

Resources), i.e., on the departure from the classical teaching and learning framework, had changed for the better on both sides<sup>6</sup>.

However, even in this context, problems were noticed regarding digital competence. According to a study conducted by Spanish researchers and published in July 2020<sup>7</sup> there were several main effects of closure due to pandemic and because of the application of online learning. In a group of 10,000 teachers they noticed signs of stress, which were caused by the shortcomings they felt they had in the digital competencies required for use in teaching. Even in teachers who had had training on such competencies, gaps were noticed in the ability to create digital content.

A report like the one above gets worse considering that, according to World Educational Monitoring Reports only 40% of adults can compile an email in middle and upper developing countries<sup>8</sup>. Even low-level teachers showed deficits in relation to digital competence, although they had a predisposition to it<sup>9</sup>.

These deficits consisted of three elements: lack of internet access, time of use and quality of internet use; a gap in teacher skills, existence of resources,

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<sup>6</sup>Erika-Elvira Hernández-Carranza & Sandra-Irene Romero-Corella & María-Soledad Ramírez, Evaluation of Digital Didactic Skills in Massive Open Online Courses: A Contribution to the Latin American Movement.

<sup>7</sup> Luis Espino-Díaz \*, Gemma Fernandez-Caminero, Carmen-Maria Hernandez-Lloret, Hugo Gonzalez-Gonzalez and Jose-Luis Alvarez-Castillo,

[https://www.researchgate.net/publication/277674184\\_Evaluation\\_of\\_Digital\\_Didactic\\_Skills\\_in\\_Massive\\_Open\\_Online\\_Courses\\_a\\_Contribution\\_to\\_the\\_Latin\\_American\\_Move](https://www.researchgate.net/publication/277674184_Evaluation_of_Digital_Didactic_Skills_in_Massive_Open_Online_Courses_a_Contribution_to_the_Latin_American_Move)

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[19\\_on\\_Education\\_Professionals\\_Toëard\\_a\\_Paradigm\\_Shift\\_ICT\\_and\\_Neuroeducation\\_as\\_a\\_Binomial\\_of\\_Action](https://www.researchgate.net/publication/342938028_Analyzing_the_Impact_of_COVID-19_on_Education_Professionals_Toëard_a_Paradigm_Shift_ICT_and_Neuroeducation_as_a_Binomial_of_Action)

<sup>8</sup> Muñoz-Pérez, E.; Cubo-Delgado, S. Digital Competence, Special Education Teachers’ training and Attitude toëards the ICT (Information and Communication Technologies). *Profesorado* 2019, 23. [CrossRef].

<sup>9</sup> Fernández-Enguita, M.; Vázquez-Cupeiro, S. *La Larga y Compleja Marcha DEL BIC AL BIT: El Acceso a Los Recursos Digitales En La Educación*; Ariel: Barcelona, Spain, 2017.

and information; and adaptation of recommended online platforms for *online learning*<sup>10</sup>.

The data presented above are only a small part of the studies that show the problems associated with adopting online learning (not only in pandemic times) as a new and useful alternative that can be combined with traditional learning. to achieve better results in didactic terms.

### **Albanian context**

At the international level, before the pandemic, educational systems had started to use teaching methods and formats that introduced teaching in the virtual space and had created platforms for online instruction. This was not necessarily the case in Albania.

In 2014<sup>11</sup>, Albanian education underwent a complete reform aiming at the application of the new Curriculum Framework, which included pre-university education in the EU Curriculum Framework, while respecting the specifics of the Albanian system. In terms of competent learning, emphasis was placed on students' digital skills as one of the key points for integration in the digital age<sup>12</sup>.

At the same time, the teaching method was reconceptualized, with a focus on active learning<sup>13</sup>. In this regard, the drafters of the Learning programs

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<sup>10</sup> Hodges, C.; Moore, S.; Lockee, B.; Trust, T.; Bond, A. The Difference between Emergency Remote Teaching and Online Learning; EDUCAUSE Review: Louisville, CO, USA, 2020. Available online: <https://er.educause.edu/articles/2020/3/the-difference-between-emergency-remote-teaching-and-online-learning> (accessed on 3 June 2020).

<sup>11</sup> [https://arsimi.gov.al/wp-content/uploads/2018/08/RAPORTI\\_Korrik.pdf](https://arsimi.gov.al/wp-content/uploads/2018/08/RAPORTI_Korrik.pdf)

<sup>12</sup> The knowledge society is gradually evolving into a new, highly challenging digital age. To integrate into a digital economy, students need digital competencies. The education system must aim for digital literacy to achieve the degree of fully functional literacy. Digital knowledge and skills are not enough to create complex personalities for the digital age, because the main force of the digital world are the people and the core values they display. (<https://ascap.edu.al/ep-content/uploads/2017/03/Korniza-Kurrikulare.pdf>)

<sup>13</sup> Contemporary conceptions of the learning process emphasize the active role of students in the development of new knowledge and competencies. Students should be active in the process of building, implementing, and evaluating them. Only in this way will knowledge, skills, values, and attitudes be organized into structures that enable their use. This also requires changing the role of teachers who should

were asked to guide the system of teacher training and education, either by state institutions under the MASR, or by private training institutions.

On 07/04/2015<sup>14</sup>, the project for the digitalization of Albanian schools through the integration of technology in secondary education began. This was labelled as one of the priorities of the government of the time. Initially, the project aimed to create digital classrooms in sixty high schools throughout the country, equip 120 classrooms with tablets, and then extend the investment to all schools in the country. In 2015, 5800 tablets were purchased and \$3.5 million was spent from the state budget. But this project, supported by a series of agreements with international partners such as Intel, Google, Microsoft, and Samsung who offered their assistance through scholarships, or for the training of qualified teaching staff, provided neither specific modules for online learning nor special didactics for these new teaching formats. The instructional approach was almost the same as that of face-to-face. The only change was using the tablets to gather information, or to share materials with students. Tablets were not equipped with applications that would ensure the independent work of the student. Applications that allowed for online collaboration, groupwork, and meeting spaces were not made available

The private training company Irisoft, in cooperation with MESY, began a pilot of the E-Learning Platform. This training, we believe, could not be successfully completed due to serious non-engagement of state institutions and later for unforeseen causes (earthquake, pandemic).

By government decision no. 11, Date 11.1.2016<sup>15</sup>, in the framework of the Approval of the Strategy for the Development of Pre-University Education for the period 2014–2020, Vocational Centers were established, which would provide credited training for teachers. What was realised from the organization of teacher training modules by state institutions that undertook this task (IZHA / ESCAP, University of Elbasan, University of Tirana, University of Sports, University of Durrës, University of Vlora, University of Korça) and licensed private centres (54 such), was the allocation of a variety of modules based on the needs of teachers<sup>16</sup>. In the

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be, more and more, leaders and creators of learning situations .( <https://ascap.edu.al/wp-content/uploads/2017/03/Korniza-Kurrikulare.pdf> )

<sup>14</sup> <https://arsimi.gov.al/klasa-inteligjente-shkolla-digjitale/>

<sup>15</sup> [https://arsimi.gov.al/wp-content/uploads/2019/07/Vendim-i-KM\\_11\\_11.01.2016-Strategjia-e-Arsimit-paraunivers-2014-2020.pdf](https://arsimi.gov.al/wp-content/uploads/2019/07/Vendim-i-KM_11_11.01.2016-Strategjia-e-Arsimit-paraunivers-2014-2020.pdf)

<sup>16</sup>By the term ‘traditional method’ we mean the teacher-centered teaching process, during which the teacher explains and the student listens.

research on these modules, we found a discrepancy between the teaching method suggested by the curriculum (cited in reference 12) and the teaching method that offers a considerable number of modules, which organize specific trainings on student-centered learning<sup>17</sup>. This discrepancy between the methodology offered by the Interactive Didactics, and consequently the National Curriculum, may and should have been reflected in the new way of online teaching, which, according to our findings, took a step back during the closure due to the pandemic and following, engaging a teacher-centred didactic model. In 2010 IZHA (Institution of Educational Development) which later was renamed ASCAP (Agency for Quality Assurance of Pre-University Education), was created. Its mission consisted of providing expertise and high-level professional consulting, based on results of research work and education practice. This institution, in cooperation with private institutions, offered training courses for teachers. In the entirety of the modules that were developed only some of them focused on information technology, but even that space only partially referred to didactics. From a very large number of modules (about 500) those related to digital didactic competence were in very small numbers. We identified the following:

1. Web design and practical use of the virtual laboratory in the classroom - UPT, Faculty of Information Technology.
2. Use of GIS technology (geographic information systems), for the creation of digital maps - Advanced Training Center.
3. Digital tools for teaching and learning (TEAVET), University of Korça.
4. Digital tools for teaching and learning (TEAVET), University of Elbasan.
5. Digital learning (TEAVET), University of Durrës.

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Throughout this process the lesson is conceived divided into two parts: in the first part the teacher asks the student to determine the level of absorption of the learning knowledge of a previous lesson and in their part he explains the new lesson. Albanian education has followed this teaching model until the early 2000s.

[https://www.academia.edu/7572922/IDENTIFIKIMI\\_I\\_NEVOJAVE\\_TË\\_MËSUESVE\\_PËR\\_ZHVILLIM\\_PROFESIONAL](https://www.academia.edu/7572922/IDENTIFIKIMI_I_NEVOJAVE_TË_MËSUESVE_PËR_ZHVILLIM_PROFESIONAL)

<sup>17</sup>Module: “ Student-centered teaching and learning methods - IZHA and UET; Student-centered teaching and learning methods (Qendra Irisoft), etj.

From the data presented above we can conclude that if we consider the experience of drafting the E Learning Strategy<sup>18</sup>, which has not yet been approved, and teacher training for ECDL<sup>19</sup>, schools in Albania did not have the infrastructure nor the digital ability to successfully cope with the new situation of *online* teaching.

### **The questionnaire and data analysis**

To develop an objective judgement about how the training and infrastructure provided by the state affected online teaching, we designed a questionnaire. This questionnaire asked for information about the digital experience of teachers, the sources of their digital competence, how digital skills were used in lessons, how digital platforms supported work with students, and which digital infrastructure was used during the pandemic.<sup>20</sup>The results we obtained reflected most of our conjectures and brought us new data, which we are presenting below along with our interpretation. The questionnaire was completed by 1033<sup>21</sup> pre-university teachers working in the most developed centres of Albania, which presupposes a higher level of digital competence compared to the poorest areas. The cities where the form was completed are Tirana, Berat, Elbasan and Shkodra.

As illustrated in Figure 1, the average age of teachers who completed it is about 40-45 years old, of whom 84.4% are female, while the rest are male.

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<sup>18</sup>Based on the Strategy for the Development of Pre-University Education 2007-2017, point 4.6.1 describes the implementation of E-learning policies and practices in the pre-university system.

<sup>19</sup>ECDL is a universally accepted qualification that enables individuals to prove their knowledge in computer skills and knowledge. ECDL is accepted as a standard by more than 88 European and world countries. ECDL contains seven modules: basics of informatics; Windows XP (computer utilization and file management); Word (word processing); Excel (spreadsheet calculation); Access (databases); PowerPoint (presentation); Internet basics (Internet Explorer 6.0 and Outlook).

<sup>20</sup>[https://docs.google.com/forms/d/1NOXCKzzwEN2MzzyUcbAMHĚoKkVkg4zZ\\_ZrROGX3UjQL8/edit#responses](https://docs.google.com/forms/d/1NOXCKzzwEN2MzzyUcbAMHĚoKkVkg4zZ_ZrROGX3UjQL8/edit#responses)

<sup>21</sup> Questionnaire tables are found at the end of the article.

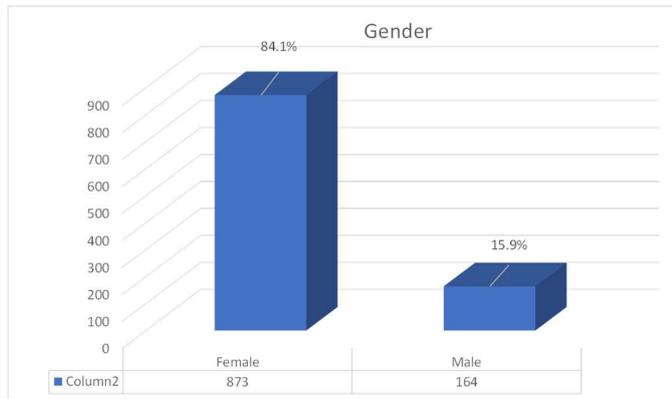


Figure 1

The questionnaire was completed by teachers of three pre-university levels: 31% of the respondents were teachers of Primary Education, 42.4% of the respondents were Lower Secondary Education, and 30.1% of the respondents were Higher Secondary Education teachers. See Figure 2. Thus, data sources are evenly distributed across all levels.

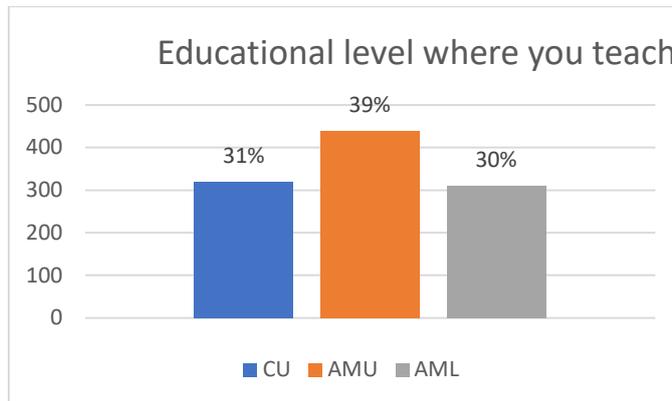


Figure 2

Regarding the question which sought to provide information on the prior knowledge that teachers had of E Learning, 70% of the participants answered positively and 30% stated that they had no knowledge on this process. Given that the questionnaire was completed in the largest cities of Albania and mainly in urban areas, such a figure is not at all encouraging, as it predicts that about 309 teachers do not know the process of online learning and therefore, most likely have not applied it. This data, at the same time, testifies

to an ineffective quality of their online lessons, consequently of the online didactic process.

When asked about the source of information, about 41% claimed that knowledge came from independent study. 33% of them named IZHA / ESCAP as a source (which in fact should be the main source for all teachers.) 23% had received this information from private training institutions, and various licensed centres, as mentioned in the preceding paragraphs. 3% named other sources of information. See Figure 3.

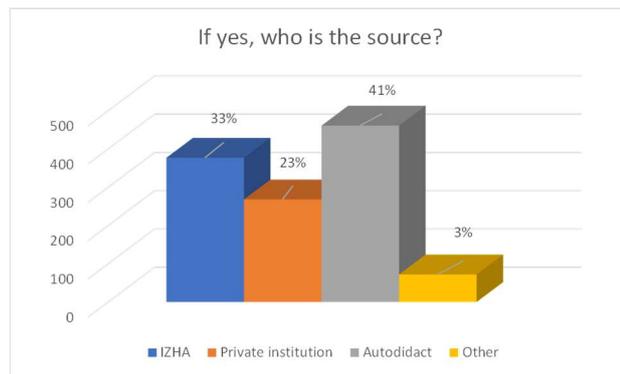


Figure 3.

Of those participants that had knowledge of E-learning, only 84.1% of teachers stated that they had used this knowledge, while 16% (165 teachers) said they had not. See Figure 4. Note that this 84.1% is of the 70% who knew about e-Learning: this equates to only 59% of teachers using knowledge about e-Learning in their online instruction.

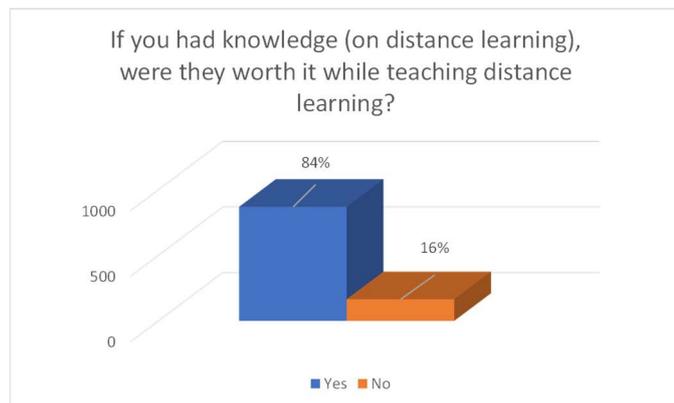


Figure 4

This data supports our observation that state institutions such as IZHA / ESCAP, are not thorough in their training activity. This is an activity that should include 100% of the contingent of teachers (1033 in our case) but covers only 36.6% of them (377 in 1033), while the rest (728 teachers or 70.4%) refer to self-study or private institutions, which, as we have discussed above, do not unify the material for all academic staff. Furthermore, participation in training modules is optional in terms of selection of modules and application of curriculum. So IZHA / ESCAP, according to these data, is in a peripheral position and not leading as it really should be.

The fourth question asked participants to identify the source of the teaching method and resources commonly used by the teachers, aiming to create a complete picture of how teachers have been trained regarding teaching methods and resources.

As can be seen in Figure 5, 59% (614) of teachers responded that they received information about E-learning during individual study; 47% (488) teachers received it from non-state specialized sources in the field; 33% (341) from leading institutions and 27% (287) from professional networks. From this evidence more than half of the teachers are prepared individually and the rest are led by the governing bodies of the school or the professional network. It is notable that the organizations that are intended to lead the training have reached only half the participants.

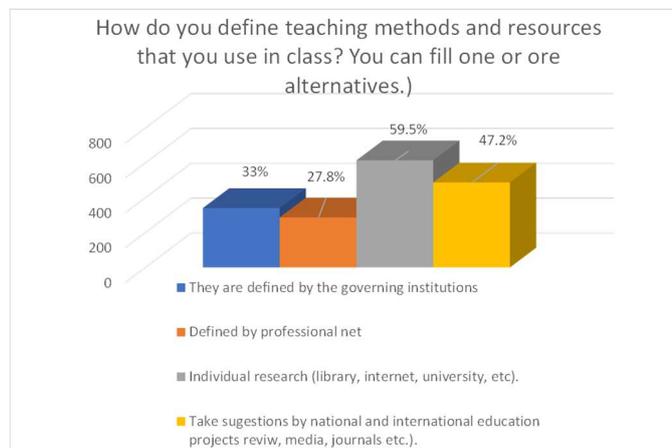


Figure 5

Figure 6 shows the responses of participants when asked what pedagogical methods were used during distance learning. Participants were allowed to choose more than one alternative, but still the most common

choices are traditional teaching and teaching combined with audio visual methods. This graph points to the fact that teachers often did not choose optimal strategies for online teaching and learning.

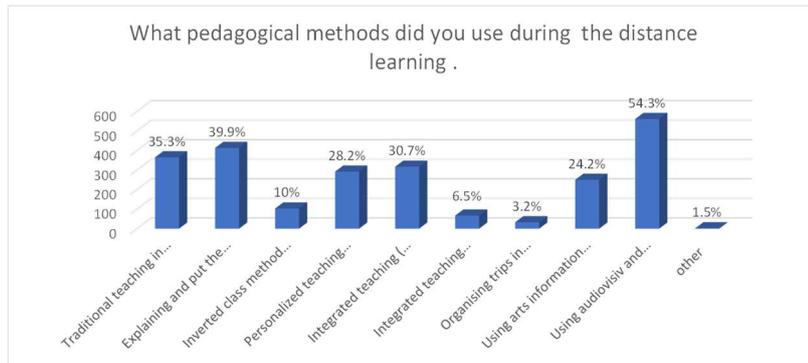


Figure 6

Given that 35.3% confirm that they use the *traditional method*, this means that in terms of online learning many teachers return to an old method of explaining new concepts. The centrality of the teacher's image is configured in the relationship: the teacher explains and the student listens (to understand new concepts), and this form of teaching has nothing in common with E-Learning platforms much less with the use of digital tools. During this didactic procedure, the student loses interactivity, is no longer the protagonist in the lesson and, moreover, does not provide training in relation to the field, as claimed in the new curricula (The data referred to above, questions some institutional reporting studies<sup>22</sup>, which conclude the online learning process was successful in pandemic conditions.).

Figure 7 reveals what tools were chosen to communicate with students during distance learning.

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<sup>22</sup> MASR & ESCAP., “Online learning survey, perceptions of students, teachers and parents”. 1-2, Mars-Prill 2020

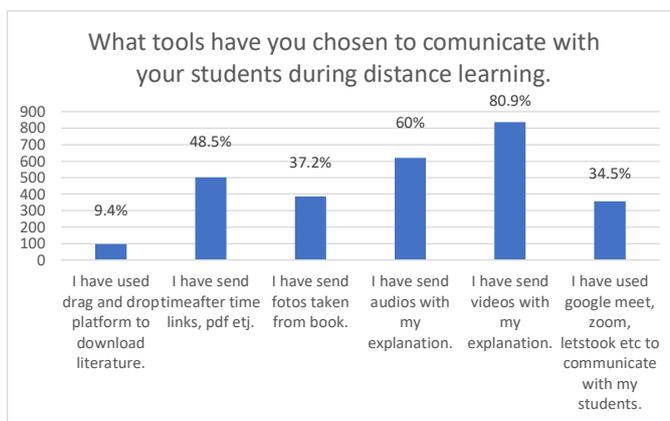


Figure 7

This question reveals teachers' digital competence and how it is applied to learning. Teachers could choose more than one method, and the figure reports the following data: 80% of teachers sent videos with explanations; 60% of teachers sent audio with explanations; 48.6% sent ready links from the internet; 37.3% sent photos from the book; 34.6% use specific platforms (Zoom, JustTalk, etc.); 9.4% use drag and drop platforms.

The above data reflects a chaotic situation that raises an urgent need for intervention. As can be seen about 80% of teachers admit that they have sent videos where they have explained the lesson and given orientations, isolating the learning process in explaining the concepts, thus undermining the basis of didactics: the teacher-student interaction. The teaching has taken on a dictatorial character in the centre, removing the prospect of student interaction. This reality has turned the online classroom into an unsuitable space to achieve the objectives of the new Curriculum.

Meanwhile, the various platforms "Drag and Drop" so used today in school environments in the world, are an optimal solution for the realization of specific subject applications, offering opportunities for interactivity, multimedia lessons, or use of visual aids in teaching. These platforms are almost non-existent in Albanian education. This assertion, which we consider an emergency, is also supported by the following data, in which the graph shows that 80% of distance learning teachers use paper as the basic tool on which they base their teaching. See Figure 8.

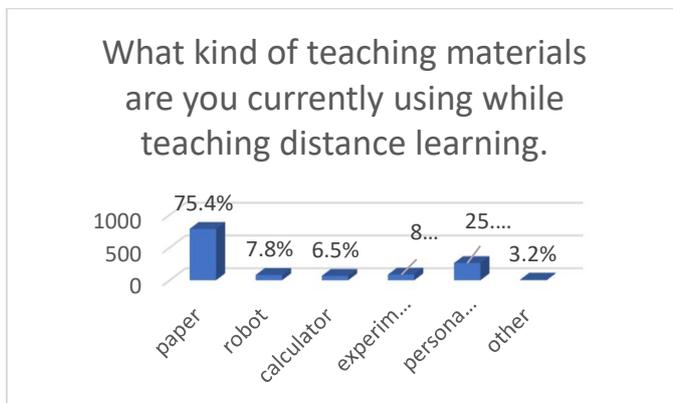


Figure 8

Regarding assessment, it should be stated that teachers in 83.8% respect the assessment form of the Curriculum Framework and use the progressive way of assessment. See Figure 9.

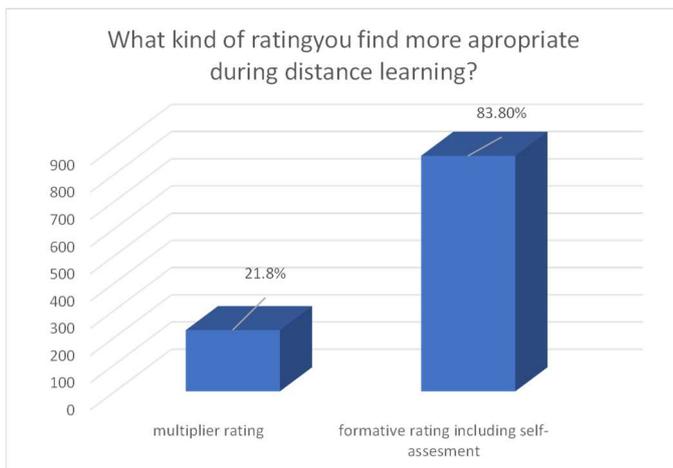


Figure 9

However, the progressive way of evaluation is based on didactics which is based on interaction. The teacher evaluates the student during their journey in the academic process but relies on important indicators such as participation in the lesson, self-assessment, work with projects, files, and intermediate and annual tests. These modalities may not be compatible with traditional teaching methods which makes us doubt the quality of assessment.

The last question reveals problems faced during online instruction related to pupils' digital competence and the effects on teaching. Teachers reported that students do not have digital skills and students are unable to use teaching aids, so in reality teachers have not even done traditional normal teaching. Because of the lack of student competence, work has necessarily been teacher centred. See Figure 10

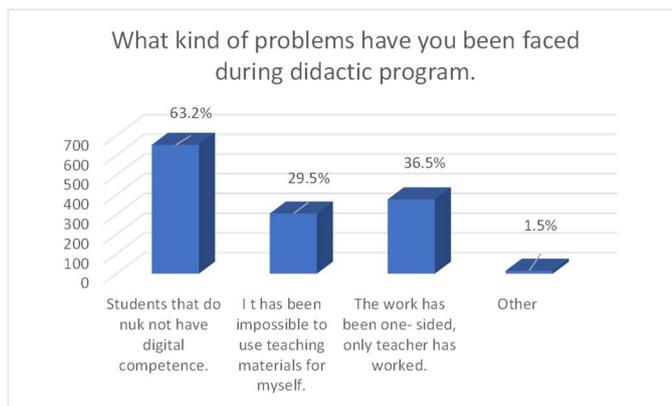


Figure 10

### Deductive analysis on the situation

Comparing the description of the Albanian education system with the data of the questionnaire, we find that teaching in the unforeseen emergency presented several difficulties which are mostly due to the lack of policies regarding teacher training with online teaching and learning. In these conditions, we assess several reasons that have complicated this situation:

- The pandemic situation and the learning that took place during it had significant deficiencies in the teacher-student relationship. These were conditioned by the lack of competence of both parties in the context of a genuine didactic related to it.
- The above statement is supported by other data related to the concrete infrastructure. We are not just talking about specific teaching applications. We are referring to an almost non-existent infrastructure in this regard. This statement is related to the fact that both teachers and students are not equipped with laptops or tablets and in many cases the lack of internet at school, and at home (referring to the economic level of the population) or the use of only the telephone for this process (which fails to meet the requirements of this format).

- The shortcomings described above were compounded by other problems. Of concern was the problem of standard time management and the combination of telematics instruments, the characteristics that had to be met at minimum and maximum values, and their institutional and personal standardization. For example, in this context we would refer to the lack of an optimal virtual connection between theoretical side and laboratory products; the lack of an instrument that would realize the merging of teaching time in the integration of several learning processes; giving concepts, receiving them and reflective re-evaluation; standardization according to each institution in accordance with its specifics of teaching instruments (not only telematics); defining standardization fluctuations in this new teaching space; and institutional unification, combining teaching stages with didactic tools adapted for distance learning.
- Limiting physical teaching spaces was another element that was observed in this context. Another modality emerged in which an employee's private space is made public to adapt alternative communication instruments<sup>23</sup>.
- The lack of legal-regulatory definition in fact complicates the status of Distance Learning, because officially some teaching norms are not defined, such as: absences, their reasoning or not, interaction. By not being mandatory the work of pupils / students becomes uncontrollable in the given conditions. This "non-mandatory participation" reflected consequences in two very important aspects of the didactic process: *continuous assessment and final assessment*. In both cases, but especially in the latter, final decisions can be easily challenged. The evaluation determined the student's exit training, but the fact that in the following year MESY (Ministry of Education, Sports, and Youth) decided to subject the learning process to the retrieval of scientific concepts for a certain period, made the didactics to be again before an eventual collapse.
- The main finding of this data submitted by the questionnaire (and not only) has to do with what we would call the "didactic crisis".

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<sup>23</sup>The private spaces of the teacher or student in terms of communication with cameras, the accurate and concrete lack of knowledge of the process of mechanical operation of these instruments, in many cases generated embarrassing or humorous situations of users on both sides (student teacher).

"*Didactics means the art of teaching*" declares Comenius (1640) in the first sentence of *Didattica Magna*<sup>24</sup>. While Johsua S., Dupin J.J in 1993 asserts that *didactics (of a discipline) is the science that studies the phenomena of teaching, the conditions for the transmission of the "culture" of an institution, and the conditions for a student to acquire knowledge*<sup>25</sup>. Still further in 2007 A. Calvani states: *Didactics is defined as the discipline that deals with the design, implementation, evaluation, and symbolic negotiation actions appropriate to favour in different contexts the processes of acquiring the best quality and efficiently through specific formative instruments*<sup>26</sup>.

In this context and in the new conditions of application of general didactics in relation to specific didactics (disciplinary didactics first of all), which is in fact a synthetic science that relates and relies on various educational sciences and those related to social, economic, anthropological, communication, technology, psychology, and history studies, *all the reasons set out above led to the crisis of traditional didactics (as the most preferred until then)*, as this unforeseen emergency by the education system in Albania oriented the need of changing the conception of didactics to another framework. This is a new challenge, which in the created situation brought another notion in the field of didactics.

In the new conditions, which were described by the questionnaire, this relationship is placed in doubt, when faced with the lack of communication and teacher-student interaction. Such a thing makes necessary in Albania the real application of another didactic notion, that of *distance didactics*. The latter should not have been piloted without a teacher training once and then applied, as the pilot project for some schools had started.

Above all, it should have been accompanied by surveys and studies, which would reflect the problems that arose on the ground, to find solutions. Only then should this new teaching didactics in which the elements of E-Learning are intertwined have been distributed and applied in all schools.

In parallel, the infrastructure in schools had to be set up. The most basic was the internet connection in each school and the provision of the necessary computer tools for each student and teacher.

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<sup>24</sup>Comenius. G.A., *Didattica Magna*, Edizioni Sandron, 1947

<sup>25</sup> Johsua S., Dupin J.J., *Introduction à la didactique des sciences e des mathematiques*, Presse Universitaire de France, Paris

<sup>26</sup> Calvani A. Bonaiuti.G,Ranieri.M. *Fondamenti di didattica*, Edizione 2016, Collana Manuali Universitari, Carroci Editore.

In this context, it is more than natural to ask what values were found in the network of contemporary student-centered teaching methods<sup>27</sup>, given that learning as an interactive process is not optimized in this new format.

Also, this type of didactics applied with the student in the centre, should put the student in a position in relation to the actors and factors that surround him.

This key point shifted the focus to other discussions:

- What has happened to critical thinking as a basic element of traditional didactics?
- How did the new didactic modality cope with the new social modality?
- How do we deal with the two types of teacher standards: teachers who do not change traditional didactic habits by continuing book-based teaching and teachers who use on-line platforms that have vague book links as codex.
- Is the principle of epistemological vigilance preserved and respected and what are the ways, means of knowledge transfer?
- The very existence of such doubts tells us that we are already facing a completely new reality: it is necessary to apply new didactics, which puts in crisis the parameters and the old infrastructure.

All the above puts a lot of doubt into how the lesson unfolded in pandemic conditions.

## Conclusions

1. The first and main task: Didactics must be conceived in such a way as to be comprehensive. To support each student requires that the main task of each teacher should not be teaching only in the minute (even this when it happened in the best case). The process as a whole should be conceived as an activity that students can do in conditions where he has freedom of thought, analysis and interaction, even if this activity is led by teachers.

*So, from the traditional teacher-centered didactics, in 2014 we moved to didactics with a focus on active and collaborative learning<sup>28</sup>, and in the new*

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<sup>27</sup> Above we have clarified the discrepancy with the object of methodology between the Curriculum and the modules offered. Therefore, we are taking for granted the fact that the training methods are student-centered. (<https://trajnime.arsimi.gov.al>)

<sup>28</sup> Despite the methodology announced by the National Curriculum, many training centers, approved by MASR continue to train teachers with

*distance learning conditions we are moving to distance-learning Didactics, which is oriented towards student-centered teaching, who works independently.*

2. Establishing such a balance is a difficult process: the teacher must be present anyway. He must have constant contact with the student.

The digital connection should not feel like a tutorial. It is only a part of the student-teacher work.

3. The need to build a didactic oriented towards the independent work of the student, should not rush to replace the "class assignments". This didactics must elaborate within the predetermined time contexts the planning and the material preparation. It can be applied through separate computer applications (tools) for each subject. The latter also provide concentrated theoretical orientations such as power point formats and also combine this process with exercises, which should categorize different levels of students.

This type of tutorial increases significantly the quality of learning. However, it is advisable to introduce this process as group work through communication sessions with various digital platforms, which are rarely applied in pre-university education.

The new didactics should be built with the objective of organizing the activities of such typologies, which students can perform in the new conditions, respecting the conceptualization of scientific notions in the new virtual format; format instruments for collecting the results of these activities; decipher and correct them; evaluate these activities by showing strengths and weaknesses; once the material has been processed; and institutionalize virtual meetings with students. The meeting should provide opportunities to discuss their work, to review the work, to evaluate the work. These discussion forums are accompanied by dynamic, critical discussions in such a way as to avoid moralizing methods that often accompany the work of the teacher.

4. In this new didactics, non-school factors should be considered as well, such as the economic level of the population that undermines this type of process (e.g. large families do not have access to the required electronic means or the necessary internet.) Establishing this balance remains a critical as new didactics that is emerge. Video lessons and any kind of activity in simultaneous (synchronous) connection with students should serve to "follow" them, to accompany them throughout the process. These links must

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specific modules who organize the methodology through student-centered learning. Accredited training modules can be consulted on the site:

<https://trajnime.arsimi.gov.al/Moduls/ModuleMesues?AgiensiID=2019>

be continuous but included in certain rules. This should not put the process under pressure, but on the other hand the daily contact of the teacher is a motivating necessity. This monitoring can be guaranteed by other means, besides synchronous videos: recorded videos, written messages, or audio messages. It is very important that students should feel the presence of monitoring observation, in order to take care in their training.

5. Student assessment is one of the most necessary spaces of the learning process. But assessing does not mean rating. Rating is not a suitable process for any kind of didactics, much less for distance didactics. Even under normal conditions the school does not need to "set too many grades". It is this unusual situation that showed that a well-done school does not have its ultimate goal of grading. On the contrary, Distance Learning has taught us that the school can do without grades, but the process necessarily needs to be motivated and this is what assessment does. This form of assessment in everyday life, formative assessment, aims to show each student the strengths and weaknesses.

6. Distance didactics finds the essential difference with all previous didactics in avoiding the reproduction of traditional practices. Faced with the inability to reproduce classroom work situations, teachers switch to question control virtually. It is quite obvious that this deviation is done by having as a model the control with traditional questions (which itself is debatable as a model). This system has the product of untruth, especially in these situations. Distance didactics should be built on alternative forms of control: for example presentations made by students, small group discussions (four to five students), peer assessment and evaluation, self-assessment questionnaire, etc. The main purpose is to abandon the idea that knowledge is perceived by memorizing. Promoting an interactive lesson that aims to foster the student's creative and critical ability in collaboration with the teacher and other digital or non-digital information resources.

7. Collegiality, that is, cooperation between teachers, is always essential in schools. In conditions such as those presented by the pandemic this is even more true. If teachers do not cooperate, do not agree on a timeline for their activities, do not talk to each other about methods and workload, Distance Didactics struggles. Having a spirit of cooperation, giving up the individualism often present in Albanian teaching (especially in Higher Secondary Education) is the main condition of Distance Didactics. It should be added that the integrated teaching of knowledge with other subjects is applied in the world.

In conclusion we can say that the process of Distance Didactics for its own dynamics, does not tolerate wasting time, so the time for radical and well-thought-out interventions is now. Solutions need to be flexible and fast.

In parallel, work should start with teacher training, even online with this new methodology. In this context, the state should increase investments in building the necessary infrastructure that should have already been realized

Likewise, state institutions should start drafting specific tools for each subject, providing materials, tools, and activities for classroom and online sessions. These tools can be made available through a data base

In this context, the portfolio works that are prepared and simply deposited without analysis should be reconceptualized as a process, as they are seen as a concrete reflection of the coordination of different elements of this new didactics. They also distinguish differentiated data on the individual or group of individuals, who have prepared and promote analytical debate both in the classroom and online.

Of this specific controllable schedule, if only E Learning is applied where the teacher-student meeting takes place. This can not be covered by just exchanging tasks as has usually happened.

Such methodologies, however, require smaller groups of students in the classroom, so it is mandatory to reduce the number of students in a class.

The student (and parent) should have access to his / her assessment, if a database is created which reflects the different assessments received depending on the work done.

From all this we have suggested it is clear that without a strong intervention of the state and its institutions in the first place with projects that are finalized and widely implemented based on controllable budget additions in their outputs, the situation is unlikely to improve.

Such a thing would continue to create black holes in the history of our education and above all in the education of the younger generation.

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