

ATEE-EDITE-ELTE
Online Conference
11 June 2021

RESEARCH IN TEACHER EDUCATION - THE NEXT GENERATION

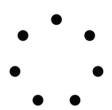
BOOK OF PROCEEDINGS



ATEE
Association for Teacher Education in Europe



EDiTE
European Doctorate
in Teacher Education



elte | ppk

Eötvös Loránd University
Faculty of Education and Psychology

PUBLISHER

Association for Teacher Education in Europe - ATEE Rue de la presse 4
Brussel 1000
Belgium

ISBN 9789082506594

EDITORS

Ei Phyu CHAW, Anna Orsolya PONGOR-JUHÁSZ, Amin SAED

GRAPHIC DESIGN

Luca Alexa ERDEI

CHAIR

Erika KOPP

ACADEMIC COMMITTEE

- Gábor Halász, Eötvös Loránd University Doctoral School of Education, Budapest, Hungary
- Aileen Kennedy, University of Strathclyde, Glasgow, Scotland
- Csilla Pesti Teacher Training Centre of Karoli Gaspar University of the Reformed Church, Budapest, Hungary
- Erika Kopp, Eötvös Loránd University Faculty of Education and Psychology, Budapest, Hungary
- Eszter Bükki, Eötvös Loránd University Faculty of Education and Psychology, Budapest, Hungary
- Marta Kowalczyk-Walędziak, University of Białystok, Faculty of Education, Białystok, Poland
- Roman Švaříček, Masaryk University, Faculty of Arts, Brno, Czech Republic
- Vasileios Symeonidis, Institute of Education Research and Teacher Education, University of Graz, Graz, Austria

REVIEWERS

- James Underwood, University of Northampton, Northampton, Great Britain
- Kinga Káplár-Kodácsy, Eötvös Loránd University Faculty of Education and Psychology, Budapest, Hungary
- László Horváth, Eötvös Loránd University Faculty of Education and Psychology, Budapest, Hungary
- Orsolya Kálmán, Eötvös Loránd University Faculty of Education and Psychology, Budapest, Hungary
- Zoltán András Szabó, Eötvös Loránd University Faculty of Education and Psychology, Budapest, Hungary

ORGANIZERS



The Association for Teacher Education in Europe (ATEE) is a non-profit European organization, whose aim is to enhance the quality of Teacher Education in Europe and supporting the professional development of teachers and teacher educators at all levels through active dialogue and international exchange of research and practice.

Website: <https://atee.education/>



EDiTE was a four-year project (2015-2019) supported by the European Union's Horizon 2020 research and innovation program. Under the project, fifteen Early Stage Researchers from eleven countries were employed by five partner universities, where they pursued individual research projects in the framework of the EDiTE joint research program. The theme of the EDiTE program, Transformative Teacher Learning for Better Student Learning within an Emerging European Context, draws on the deep interdependence of educational research and practice.

Website: <http://www.edite.eu/>



elte | ppk

**Eötvös Loránd University
Faculty of Education and Psychology**

Doctoral School of Education offers a PhD programme fully in English on Teacher Education and Higher Education Studies. The Faculty was a consortium member in the European Doctorate in Teacher Education (EDiTE) project.

Website: <https://www.ppk.elte.hu/en/>

“PPK, everything that is human.”

Education at ELTE PPK is considered a lot more, than just gaining academic knowledge; it is a mission as well. ELTE is among the most acknowledged institutions in Hungary offering teacher education programmes for pre- and in-service teachers. Besides the Hungarian language programmes, the Faculty's

MISSION STATEMENT

The conference focused on methodological issues in teacher education research. Its main goal was to create opportunities for introduction and networking, to generate professional discussions for early-stage researchers and doctoral students whose topic is related to teacher education, and to strengthen the links between research generations.

Teacher education as a field of research is extremely complex, and as a result, the methods used to study the field are extremely diverse, while the interdisciplinary approach is also gaining strength among the studies.

The conference wanted to showcase this diversity by strengthening the dialogue between the different areas.

TABLE OF CONTENTS

TABLE OF CONTENTS.....	6
PROGRAMME	7
MARINELA BORAS, <i>JOSIP JURAJ STROSSMAYER UNIVERSITY</i> PROFESSIONAL DEVELOPMENT FOR 21ST CENTURY TEACHERS	9
EI PHYU CHAW, <i>EÖTVÖS LORÁND UNIVERSITY</i> ERIKA KOPP, PHD, <i>EÖTVÖS LORÁND UNIVERSITY</i> PRACTICUM IN PRE-SERVICE TEACHER EDUCATION IN MYANMAR: DILEMMAS ABOUT METHODOLOGICAL ISSUES	14
JINGXIN CHENG, <i>UNIVERSITY OF MISSOURI-ST. LOUIS</i> XIAODI LI, <i>UNIVERSITY OF MISSOURI-ST. LOUIS</i> MING YI, <i>UNIVERSITY OF MISSOURI-ST. LOUIS</i> BECOMING A TEACHER: A CASE STUDY ON STUDENT TEACHER PROFESSIONAL IDENTITY CONSTRUCTION DURING THE EDUCATION PRACTICUM IN A NORMAL UNIVERSITY IN CHINA	19
ANN-MARIE IRELAND, DUBLIN CITY UNIVERSITY: BEHIND THE MASK – EXPLORING PRIMARY TEACHER VULNERABILITY WITHIN THE CONTEXT OF SELF-UNDERSTANDING & THE DILEMMA OF THE ARTS-BASED APPROACH.....	25
AYE AYE MYINT LAY, <i>EÖTVÖS LORÁND UNIVERSITY</i> DESIGNING PERFORMANCE APPRAISAL FRAMEWORK FOR TEACHER EDUCATORS.....	31
MOET MOET MYINT LAY, <i>EÖTVÖS LORÁND UNIVERSITY</i> CONTINUOUS PROFESSIONAL DEVELOPMENT AND QUALITY TEACHER EDUCATION IN MYANMAR.....	36
NÓRA NÍ BHEAGLAOICH, <i>MARY IMMACULATE COLLEGE</i> GENERATING AND GATHERING DATA THROUGH ACTION RESEARCH	41
LUKA PONGRAČIĆ, <i>UNIVERSITY OF SLAVONSKI BROD</i> ROLE OF ADOLESCENT DEVELOPMENT IN THE SOCIALIZATION PROCESS DURING PREADOLESCENCE LIFE PERIOD	48
ALEXANDR TKACHEV, <i>KOKSHETAU STATE UNIVERSITY</i> ESENGALY SMAGULOV, <i>ZHETYSU STATE UNIVERSITY</i> ALBINA TEMERBEKOVA, <i>GORNO-ALTAISK STATE UNIVERSITY</i> METHODS OF APPLICATION OF INFORMATION AND COMMUNICATION TECHNOLOGIES IN THE NETWORK OF INTELLECTUAL SCHOOLS IN TEACHING MATHEMATICS OF ECONOMIC MODELS.....	53
MOLDIR YELIBAY, <i>EÖTVÖS LORÁND UNIVERSITY</i> UNDERSTANDING THE LACK OF FEMALE LEADERSHIP IN HIGHER EDUCATION OF KAZAKHSTAN.....	64

PROGRAMME

09:00 - 09:10 WELCOME

Erika KOPP, Chair, Eötvös Loránd University

Davide PARMIGIANI – President of ATEE, Association for Teacher Education in Europe

09:10 - 09:40 KEYNOTE ADDRESS

Aileen KENNEDY, University of Strathclyde
'Making a difference through teacher education research'

09:40 - 10:00 VIRTUAL ICEBREAKER - GETTING TO KNOW THE CONFERENCE PARTICIPANTS

Moderator: Luca Alexa ERDEI, Eötvös Loránd University

10:00 - 11:00 WORKSHOPS ROUND 1.

Workshop 1: Challenges of Qualitative methodology –
Facilitator: Kinga KÁPLÁR-KODÁCSY, Eötvös Loránd University

Workshop 2: Challenges of Qualitative methodology –
Facilitator: Zoltán András SZABÓ, Eötvös Loránd University

Workshop 3: Challenges of Quantitative methodology –
Facilitator: László HORVÁTH, Eötvös Loránd University

Workshop 4: Dilemmas around Mixed methods -
Facilitator: Orsolya KÁLMÁN, Eötvös Loránd University

Workshop 5: Issues of Contextualisation –
Facilitator: Roman SVARICEK, Masaryk University

Workshop 6: Dilemmas in Comparative research in Teacher Education -
Facilitators: Marta KOWALCZUK-WAŁĘDZIAK, University of Białystok & James UNDERWOOD, University of Northampton

11:00 - 11:10 BREAK

11:10 - 11:45 PANEL DISCUSSION

Moderators: Csilla PESTI, Karoli Gáspár University of the Reformed Church of Hungary & Vasileios SYMEONIDIS, University of Graz

11:45 - 12:45 WORKSHOPS ROUND 2.

Workshop 1: Challenges of Qualitative methodology –

Facilitator: Kinga KÁPLÁR-KODÁCSY, Eötvös Loránd University

Workshop 2: Challenges of Qualitative methodology –

Facilitator: Zoltán András SZABÓ, Eötvös Loránd University

Workshop 3: Challenges of Quantitative methodology –

Facilitator: László HORVÁTH, Eötvös Loránd University

Workshop 4: Dilemmas around Mixed methods -

Facilitator: Orsolya KÁLMÁN, Eötvös Loránd University

Workshop 5: Issues of Contextualisation –

Facilitator: Roman SVARICEK, Masaryk University

Workshop 6: Dilemmas in Comparative research in Teacher Education -

Facilitators: Marta KOWALCZUK-WAŁĘDZIAK, University of Białystok & James UNDERWOOD, University of Northampton

12:45 - 12:55 BREAK

12:55 - 13:10 PLENARY SESSION FOR SUMMARIZING THE WORKSHOP DISCUSSIONS

Moderator: Erika KOPP & Eszter BÜKKI, Eötvös Loránd University

13:10 - 13:20 CLOSING OF THE CONFERENCE

Gábor HALÁSZ, Chair of the Scientific Committee, Eötvös Loránd University

13:20 - 14:30 OPEN ROOMS FOR PROFESSIONAL NETWORKING

Marinela BORAS, *Josip Juraj Strossmayer University*
Professional Development for 21st Century Teachers

ABSTRACT

Professional development is an important aspect of life of every teacher as it represents a life-long learning process of acquiring knowledge and various skills. As teaching methods have been adapted to 21st century learners, teachers also need to professionally develop themselves to be able to teach the new generations of learners. According to Darling-Hammond, Hyler and Gardner (2017), effective teacher professional development can be defined as structured professional learning that changes teacher practices and improves student learning outcomes. This paper aimed to explore the professional development of teachers as they should motivate learners for life-long learning and help them acquire 21st century skills. The research was conducted through surveys and the sample consisted of secondary school teachers at a selected school. The results were analysed by descriptive statistics. This research could bring new insights in the field of didactics as professional development courses could be improved to better suit the needs of teachers and their students. Further research could also implement improved professional teacher development into European school curricula.

KEYWORDS: successful teaching, competencies, professional teacher development, life-long learning, 21st century skills

1. INTRODUCTION AND LITERATURE REVIEW

Professional development is an important aspect of life of every teacher as it represents a life-long learning process of acquiring knowledge and various skills. As teaching methods have been adapted to 21st century learners, teachers also need to professionally develop themselves to be able to teach the new generations of learners. According to Darling-Hammond, Hyler and Gardner (2017), effective teacher professional development can be defined as structured professional learning that changes teacher practices and improves student learning outcomes. It is content focused, incorporates active learning, supports collaboration, uses models of effective practice, provides coaching and expert support, offers feedback and reflection and is of sustained duration.

Weinert (2001) and Klieme et al. (2003) define competencies as individual's cognitive competencies and skills for solving specific problems. Rychen and Salganik (2003) define competencies as skills for successful solving individual or social demands, as well as activities and tasks. Minet, Parlier and de Witte (1994) understand competencies as levels of activities – objective, which are affected by tasks and conditions, and subjective, which are affected by cognition and experience. Parry (1996) thinks that competencies correlate with success and can be improved by education and training. Perrenoud (2002) says that competencies represent the ability of being efficient in different situations and that they are based on knowledge. Epstein and Hundert (2002) say that competencies should be observed as developmental signs which differ according to different levels of professional functioning of an individual, the length of work status and area of interest. Kueffer et al. (2012) define competencies as cognitive abilities and skills such as professional knowledge, personal belief, the scale of values and motivation. Day (1999) says that a competent individual should have the ability to perform certain roles. Greene (1996) describes competencies as measurable work habits and social skills used to

achieve certain goals. Waters and Sroufe (1983) define a competent individual as a person who is competent using natural and personal resources to achieve a good result.

According to Hargreaves (2003), to professionally develop oneself as a teacher does not merely mean to develop knowledge, skills and competencies, but to build character and strengthen commitment, loyalty, readiness, stability and values in oneself and others, thus making schools moral communities. Goleman (1996) says that emotional competency is a teacher skill to leave one's problems outside the classroom and come cheerfully into class. Kyriacou (1995) claims that essential teacher competencies needed for successful teaching are: planning and preparing lesson plans, class discipline, evaluation of students' progress and teacher's own work.

2. METHODOLOGY OF THE RESEARCH

This paper aimed to explore the professional development of teachers as they should motivate learners for life-long learning and help them acquire 21st century skills which the students will need in their further career. Teachers need to help students develop competencies such as critical thinking, problem-solving, effective communication, collaboration and self-direction. The problem of this research was to find out if teachers' previous professional development was enough to teach learners important 21st century skills and how teacher professional development can be improved in the future. This research was conducted in May 2021. Quantitative methodology was used as it was the most appropriate for this research.

The sample consisted of secondary school teachers (N=22) at Trade and commercial school "Davor Milas" in Osijek, Croatia. There were 22 participants in this research (N=22), predominantly female. The age of participants ranged from 25 to 65, but mostly teachers from 41 to 50 years old. The length of work in education was from 5 to 30 or more years and the average length was 20 years. Another variable was length of work at a selected school and the most common answer was from 21 to 30 years. Most teachers are employed on a full-time basis and their education level varies from B.A., M.A. and PhD, but most teachers hold an M.A. degree. According to the subjects they teach, the participants were teachers of Croatian language, foreign languages (English and German), mathematics, informatics, history, geography, P.E., religious studies, psychology and vocational subjects as it is a vocational secondary school. These variables are in accordance with the general teacher status in Croatia as teachers at schools are mostly female, around 45 years old and have been teaching for twenty years. It is important to stress that Croatian teachers are among the highest educated at the European level regarding their teaching degree. In this sample, only one teacher does not hold an M.A. or even a PhD.

The data was collected through survey which was constructed using the Likert's scale. This method of research was chosen not just because it suits the research problem, but also due to the COVID-19 pandemic as it could be conducted online. The data was analysed by descriptive statistics using the SPSS programme. The survey consisted of statements about professional teacher development which were constructed for this research. This research respected all the ethics in conducting research. The participants were given all the information before filling out surveys. The surveys were anonymous and the participants filled them out willingly. They were also informed about the results at the end of the research.

3. RESULTS AND MAIN DISCUSSION

When it comes to variables specific to professional teacher development, most teachers think that professional development should be compulsory for all teachers and that it should be directly linked with teacher promotion by awarding points for attending PD courses. Most teachers attended 1 to 10 PD courses this school year. The majority prefers both models of PD (live and online) and in the afternoon. They prefer conferences, seminars and workshops and they mostly graded PD courses this school year as very good. They would mostly like to learn more about pedagogy and psychology topics, as well as working with students with disabilities. These results show that the majority of teachers regularly attend PD courses and that they prefer traditional methods of PD instead of webinars, structured courses, reading professional literature, mentoring colleagues, attending university programmes, doing individual and group research or having informal dialogues with colleagues. As opposed to topics mentioned above, they show lower interest in topics such as didactics, methodology specific for each subject, developing teacher competencies, working with gifted students, communicating with students and their parents, implementing ICT in teaching, supporting preventive programmes, developing school management, attending PD courses funded by the EU or discussing education politics. Teachers also had to rank these topics on a Likert's scale as their assessment of the importance of a particular topic. The highest mean was for psychology topics (4,73) and working with students with disabilities (4,68) what is in accordance with their previous answers.

The survey consisted of statements about professional teacher development which were constructed for this research.

*Table 1. Arithmetic mean, standard deviation, minimal and maximal values
for statements about professional teacher development (N=22)*

Statement	M	SD	Min	Max
I regularly develop myself professionally as a teacher.	4,23	1,11	1	5
Professional development is important for my job as a teacher.	4,45	1,06	1	5
Professional development courses which I attended have helped me be better at my job.	3,77	1,19	1	5
Professional development courses which I attended have helped me further develop my teacher competencies.	3,86	1,13	1	5
Professional development courses which I attended have helped me teach my students more efficiently.	3,73	1,20	1	5
Professional development courses which I attended have helped me with my promotion.	3,86	1,42	1	5

As seen from the table, teachers think that professional development is important for their job. They regularly attend PD courses, but they lack the importance of developing teacher competencies by attending PD courses. Teachers also face some problems with PD courses. They argued that the topics are not always interesting, that the lectures are often not useful and that there should be more examples of good practice. They could also respond to open-ended questions about PD in the survey so some of their suggestions for improving PD were organising more PD courses, have interesting and useful lectures and workshops, learn more about topics connected to everyday life, have more examples of good teaching practices, attend

continuous structural modular training, motivate colleagues, have a PD plan for every school year and hold at least one lecture each year and develop an interdisciplinary approach in teaching. They think that teachers should have an approach to the highest level of education, but that it should be funded by the government as the major problem for Croatian teachers is that they find it too expensive.

4. CONCLUSION

This paper aimed to explore the professional development of teachers as they should motivate learners for life-long learning and help them acquire 21st century skills. The results have shown that teachers regularly attend PD courses and think that professional development is important for their jobs. They would like to attend more PD courses or even the highest level of education for teachers, but they face many obstacles on the way. Teachers should firstly gain 21st century skills to be able to teach these important skills to students.

This research served as a good starting point for further research about professional teacher development in different schools, cities and European countries. It could bring new insights in the field of didactics as professional development courses could be improved to better suit the needs of teachers and their students. There needs to be more research on this important topic as improved professional teacher development could be implemented in the European school curricula.

REFERENCES

- Darling-Hammond, L., Hyler, M. E. and Gardner, M. (2017). *Effective Teacher Professional Development*. Learning Policy Institute.
- Day, C. (1999). *Developing Teachers: The Challenges of Lifelong Learning*. Taylor & Francis.
- Epstein, R. M. and Hundert, E. M. (2002). Defining and assessing professional competence. *JAMA*, 287 (2), 226-235.
- Greene, J. C. (1996). Qualitative Evaluation and Scientific Citizenship: Reflections and Refractions. *Evaluation*, 2 (3), 277-289.
- Goleman, D. (1996). Emotional Intelligence. Why It Can Matter More than IQ. *Learning*, 24, 49-50.
- Hargreaves, A. (2003). *Teaching in the knowledge society: Education in the age of insecurity*. Teachers College Press.
- Klieme, E., Avenarius, H., Blum, W., Döbrich, P., Gruber, H., Prenzel, M., Reiss, K., Riquarts, K., Rost, J., Tenorth, H-E., Vollmer, H. J. (2003). *Zur Entwicklung nationaler Bildungsstandards*. Bundesministerium für Bildung und Forschung.
- Christoph Kueffer, C., Underwood, E., Hirsch Hadorn, G., Holderegger, R., Lehning, M., Pohl, C., Schirmer, M., Schwarzenbach, R., Stauffacher, M., Wuelser, G., Edwards, P. (2012). *Enabling Effective Problem-oriented Research for Sustainable Development*. Resilience Alliance.
- Kyriacou, C. (1995). *Essential Teaching Skills*. Stanley Thornes.
- Minet, F., Parlier, M. and de Witte, S. (1994). *La Compétence: Mythe, Construction ou Réalité*. L'Harmattan.
- Parry, S. B. (1996). The Quest for Competencies. *Training*, 33 (7), 48-54.
- Perrenoud, P. (2002). L'autonomie, une question de compétence? *Résonances*, 1 (1), 16-18.
- Rychen, D. S. and Salganik, L. H. (2003). *Key competencies for a successful life and a well-functioning society*. Hogrefe and Huber Publishers.
- Waters, E. and Sroufe, L. A. (1983). Social Competence as a Developmental Construct. *Developmental Review*, 3 (1), 79-97.
- Weinert, F. E. (2001). *Concept of competence: A conceptual clarification*. Hogrefe & Huber Publishers.

Ei Phyu CHAW, *Eötvös Loránd University*
Erika KOPP, PhD, *Eötvös Loránd University*
Practicum in Pre-Service Teacher Education in Myanmar:
Dilemmas about Methodological Issues

ABSTRACT

The paper describes the challenges and methodological dilemmas considering and conducting the doctoral study. The whole research is centered on practicum in pre-service teacher education in Myanmar. Pre-service teacher education is the most crucial stage in the teaching profession (Caena, 2014). Again, the practicum is a vital component of the pre-service teacher education program. (White & Forgasz, 2016). The researcher plans to use an exploratory sequential mixed method design for the study. The participants for the complete research include student-teachers, novice teachers, and teacher educators who had experience in practicum. The researcher plans to use the cluster sampling method for the quantitative part and the snowball sampling method for the qualitative aspect. The study will employ research tools, photo interviews, questionnaires, and document collection as research tools. The practical problems and dilemmas in this paper would be helpful for early-stage researchers in considering their research plan and method.

KEYWORDS: practicum, preservice teacher education, student teachers, novice teachers

INTRODUCTION

Teaching is a very complex profession, and those who want to be teachers (student teachers) need to have specialized training to develop the competencies required for teaching (Swennen & van der Klink, 2009). An individual needs to create a personal and professional identity to become a teacher. Student teachers require formal education (university program) and participation in school practices (practicum) for their personal and professional development (Swennen & van der Klink, 2009). Although a university program is essential for preparing student-teacher's professional development, it is necessary to consider the role of practicum experiences that support future teachers' learning about teaching (Bullock, 2016). The doctoral research aims to know student-teachers experiences during practicum, especially their challenges and coping strategies during their practicum.

Practicum is a field experience for student-teachers to apply their learned knowledge from their university program in real classrooms (Ngidi & Sibaya, 2003). The primary actor of the practicum includes prospective teachers, teacher educators, principals, and subject leader teachers from practice school. From the university side, student teachers are the key actors. Participants also include novice teachers who graduated from the University or College of Education to confirm the preparedness of teaching practicum in their university program for their first-year teaching. This study refers coping theory of Lazarus and Folkman (1984) related to the general coping strategies of student-teachers and novice teachers. According to Lazarus and Folkman (1984), coping occurs when an individual manages the problem with the environment (problem-focused coping) and regulates the emotional response to the problem (emotion-focused coping).

This paper intends to describe methodological dilemmas in conducting doctoral research about practicum in pre-service teacher education in Myanmar. During the doctoral study, researchers encounter unexpected challenges and barriers. This article might encourage early-stage researchers with the same problems and dilemmas to face difficulties during their doctoral journey. The literature structure in this paper flows from introduction, research framework (research paradigm and method) to a discussion about dilemmas related to methodological issues.

RESEARCH FRAMEWORK

Research Paradigm

This study is partly related to interpretivism as it aims to inspect the opinions and experiences of participants. The nature of reality in this study can be conceptualized as interpreting the experiences of people who took part in the practicum. The beliefs, opinions, and experiences of the actors involved during the practicum are the real things to be known. Personal opinions, experience, and interpretation of student-teachers, teacher educators, and beginning teachers related to the practicum are the knowledge to be explored.

However, the research is focused on renewing practicum and consideration of policy from the practical pragmatists' point of view. In order to understand the implementation of practicum by all actors, the subjective experiences of the participants plus the objective nature of the environment should be examined. These are the reasons for consideration of the research paradigm and this study will be intertwined in interpretivism and pragmatism.

RESEARCH METHODOLOGY

Research approach

The researcher plans to use mixed-method research for this study. Using qualitative and quantitative approaches, mixed methods researchers collect the data, analyze, integrate the findings, and draw the conclusion (Teddle & Tashakkori, 2009). Mixed method research can simultaneously include a range of confirmatory and exploratory questions in their studies (Teddle & Tashakkori, 2009). Thus, the researcher developed the following questions to answer qualitative and quantitative methods. (1) What are the main characteristics of practicum in pre-service teacher education in Myanmar? (2) How do student teachers cope with the challenges during their practicum? (3) How do novice teachers use knowledge and skills they got in past practicum to cope with the challenges in first-year teaching? (4) How do university teachers perceive changing role of the practicum?

Research design

According to Teddle & Tashakkori (2009), there are three stages in exploratory mixed-method design. First, the research starts the qualitative part (interview), then analyzes the interview results and develops the questionnaire, including the central theme of the discussion. The researcher uses that questionnaire to get the required information in the last stage.

Sampling and participants

The participants for the study include student-teachers, novice teachers, and university teachers who have experience in practicum. The researcher plans to use the multistage cluster sampling method for the quantitative part and the snowball sampling method for the qualitative component. In multistage cluster samples, participant groups are randomly selected in the prior sampling stage and the units of interest are then sampled within groups in the next stage. For example, schools (the clusters) are randomly chosen, and then teachers (the units of interest) in those schools are randomly sampled (Creswell & Creswell, 2018). Snowball sampling (chain sampling) is a popular purposive sampling method that involves using participants to identify additional informants in the study (Creswell & Creswell, 2018).

The researcher plans to choose one group of student-teachers from the one university of education and another group of student teachers from one education college, as they have unique structures of teacher preparation. The researchers will choose student-teachers who had practicum experience in their teacher preparation program from that group. According to the university program, student-teachers had practicum for their practicing teaching at the end of the 6th semester and 7th semester. Student-teachers from the education college 2-year diploma program had their practicum at the end of the 2nd and 4th semesters. For novice teachers, the researcher plans to contact graduated teachers from the University of Education and Education college who are now in their early period of teaching in current K-12 schools. The researchers plan to get teacher educators from the University of Education and education college.

Research tools

The researcher plans to use semi-structured interviews using photos (photo-elicitation), questionnaires, and document analysis. In this study, the photo-elicitation method will be used for the first stage of the exploratory mixed-method design to get in-depth information from the participants. Photo elicitation is the method that uses photographs to generate verbal discussion (Thomas, 2009) and produces different information by invoking feelings, memories, and information (Harper, 2002), but the researcher needs to facilitate the participant to frame and plan their responses (Glaw et al., 2017).

Then, the researcher plans to develop a questionnaire based on the central theme of the interview coding and related literature. As the researcher mentioned in the introduction section, the questionnaires will explore student-teachers' and novice teachers' experiences in past practicum, specializing in challenges and coping strategies during their teaching. When the researcher reviewed the literature, it was found that most of the studies related to practicum experience employed qualitative, quantitative, and some studies used mixed-method research. Research related to coping strategies with specific problems (e.g., classroom management, stress, behavioral issues, and professional commitment) mostly applied quantitative research methods using the questionnaire as a data collection tool.

Data analysis

The researcher plans to use SPSS software for descriptive and inferential statistics to analyze questionnaire responses. To analyze the interview transcript, the researcher plans to choose MAXQDA software to systematically code the data. Thematic analysis will be used to analyze the findings, as words and photographs can be more powerful than numbers alone. Thematic analysis is a method of identifying, analyzing, and reporting patterns (themes) within the data (Glaw et al., 2017).

MAIN DISCUSSION: DILEMMAS ABOUT METHODOLOGICAL ISSUES

The researcher encounters many dilemmas in considering the suitable research paradigms and research methods (research design, data collection, and research tools). Ferguson and colleagues (2004) wrote about the role conflicts between educators and researchers in the data collection process. As an educator, the researcher engages in teaching and assessing students' work at the faculty and will try to get more related data and in-depth information based on their knowledge as the researcher. Participants might feel uncomfortable in that situation. The cases are similar for the researcher for this current study, as the research is a former teacher educator at the University of Education, where the research setting is framed.

Researchers need to have the socio-cultural and political knowledge of the particular research settings or countries in which they are working (Pelzang & Hutchinson, 2018). A researcher requires cultural competence to catch participants' trends in the discussion. The criteria applied in one setting may not meaningfully work in another environment, as the culture is different (Ferguson et al., 2004). Besides, it is needed to have cultural relevance in research proposal, research question, and research design. These cultural issues make one dilemma for researchers in choosing research paradigm, research design, and research tool.

According to Myanmar culture, the younger pay respects to the older, never say against elders, and students obey their teachers. Students listen to the teacher's speech with respect and feel shy about describing their opinions. As the researcher is one of the teacher educators in that university, the teacher-student relationship role might influence some participants. They might not be open enough to tell their problems during their practicum. Thus, the researcher frames under the umbrella of the research paradigm of pragmatism to employ a mixed-method research approach as mixed methodologists working primarily within the pragmatist paradigm and interested in both narrative and numeric data (Teddlie & Tashakkori, 2009).

The researcher used a questionnaire and focus group interview on exploring the practicum experience of student teachers and novice teachers as a pilot study in 2019. Piloting can help us with the wording of questions and the ordering of question sequences and the prevention of non-response rates (Oppenheim & Oppenheim, 1992). Both student-teachers' and novice teachers' responses to the questionnaire are primarily favorable. Student-teachers perceived they got satisfaction and success in teaching experience. They did not mention the difficulties, and they always agree or strongly agree with the positive items related to the teaching-learning situations and professional relationship items. However, in focus group interviews, both student-teachers and novice teachers mentioned their critical opinions and suggestions to a university program, their problems and challenges, and their coping strategies.

The pilot results proved to rethink research design, the structure of the questionnaire, and the answer to research questions. There are three options behind the results of the constructive questionnaire; unstructured format, superficial level of the categories and items in the questionnaire, and participants might think that their answer to the questionnaire has evaluated them. Participants' responses to the questionnaire or interview might differ according to the dominant culture (Kamstra, 2021). As culture is different, the perceptions and experiences of participants from different cultures might not be the same. These issues make the research dilemmas about considering research design and developing research tools.

Researchers conduct focus group interviews in a pilot study to get critical points of view from the participants. In some settings, the researchers can unnoticeably lead the interviewee's responses, or each interviewee follows the answer to the previous one. Collier & Collier (1986) assert that photographs sharpen the memory and give the interview an immediate character of realistic reconstruction. The researcher wants to get detailed memorial experiences about their past practicum from the participants. That makes the researcher dilemmas whether to use focus group interviews or individual interviews.

Besides, there might be conflict realities compromising quantitative and qualitative data analysis and results. Oppenheim (1992) claimed that people see questionnaires as a more objective research tool, giving generalizable results. However, unstructured questionnaires, sampling, biased questionnaire design and wording, mistakes in coding and analysis can cause misinterpretation of results. The study of Harris and Brown (2010) highlighted that it is difficult to compromise and align the results from both questionnaires and interviews as they differ in coding and analysis methods. That conflict makes the researcher decide to change convergent mixed-method design to sequential mixed-method design.

CONCLUSION

Altogether, all researchers will consider the above dilemmas and factors in conducting and framing the research study. This article shares challenges and difficulties related to the methodological issues in conducting doctoral research. There is an unexpected obstacle in conducting the investigation, such as pandemic and political conflicts that delay the data collection process. These situations affected the time frame, research techniques, and research methods, including research design, participants, data collection, and data analysis.

Thus, all the early-stage researchers need to prepare physically and mentally for expected and unexpected challenges and dilemmas to cope with these situations to reach the destination of the research journey. This article expects future researchers to understand similar problems better and consider better methods to overcome the obstacles in their research investigation.

REFERENCES

Jingxin CHENG, *University of Missouri-St. Louis*

Xiaodi LI, *University of Missouri-St. Louis*

Ming YI, *University of Missouri-St. Louis*

Becoming a Teacher: A Case Study on Student Teacher Professional Identity Construction during the Education Practicum in a Normal University in China

ABSTRACT

Previous studies have presented a clear link between teachers' professional identity construction and teacher effectiveness and have considered the teacher professional identity as a pivotal factor to teacher effectiveness, decision-making on the career, commitment, as well as professional development. Therefore, a study on student teacher professional identity construction during education practicum could enhance their job competitiveness in terms of teacher effectiveness. This research adopted activity theory, community of practice and positioning theory into the study as a synthesized theoretical framework to serve as lenses for exploring how the Chinese student teachers construct their teacher professional identity during the education practicum. The qualitative research method was applied in this research, data included focus group interview transcripts and student teacher's education practicum reports. Findings showed that teacher knowledge, mentorship, placement school culture and recognition by important others significantly influence student teacher professional identity construction during their education practicum.

KEYWORDS: student teacher, professional identity construction, education practicum, teacher education

INTRODUCTION

Previous studies have presented a clear link between teachers' professional identity construction and teacher effectiveness and have considered the teacher professional identity as a pivotal factor to teachers' effectiveness, decision-making about their career, commitment to the profession, as well as engagement in professional development (Beijaard et al., 2004; Wang, 2020). Positive experiences in terms of teacher professional identity construction during education practicum can promote student teachers' professional commitment, specifically, their belief in the value of the teaching profession (Hong, 2010; Zhao, 2013). Guided by a synthesized theoretical framework of activity theory, a community of practice, and positioning theory for understanding teacher professional identity construction (Davies & Harre, 1990; Engeström, 2015; Lave & Wenger, 1991), this case study examined teacher professional identity construction among student teachers at a normal university in China during their education practicum.

Normal university in China refers to the higher education institutions that provide teacher education programs, which are regulated and funded through a government authority, national or local (Xu, 2011). Education practicum is a crucial part of teacher education programs in China, usually arranged in the seventh or eighth semester, lasts for one semester of about 16 to 18 weeks, and takes place at partnering schools mostly from preschool to secondary level.

During the education practicum, student teachers are usually assigned to observe, teach and complete administrative work. Student teachers, by the time they start their education practicum, may or may not have the Teacher Qualification Certificate because the Teacher Qualification Certificate Examination is held twice per year, and one can schedule when to take it.

LITERATURE REVIEW

Student teacher's perceived identity is dynamic and transforming and constantly changing in reaction to the school context through peer interaction, and interaction with other teachers. It also means they experience a period of transforming from a student to a teacher, although this transformation may or may not succeed (Spencer, 2018).

Meanwhile, when student teachers' teacher professional identity is developed, they will develop their own theories of actions, moderate their actions towards their personal theories, and perform as a teacher, fulfill the teacherly values (e. g., to observe classes, to give classes to the students), and engage in the role of a teacher (Danielewicz, 2001).

In this research, we combined activity theory, community of practice, and positioning theory into the study as a synthesized theoretical framework to guide us in pursuing the process of student teacher professional identity construction. We found the common ground of these three theories as they are all under the umbrella of sociocultural theories.

METHOD

We adopted a qualitative research method to answer the research question How do the Chinese student teachers construct their teacher professional identity during the education practicum? Focus group interview transcripts and practicum reports were used as data sources. Participants were recruited from a normal university in China who have completed education practicum. Participants were recruited by sending out recruitment emails, and 51 student teachers agreed to submit education practicum reports, 13 of whom agreed to participate in the focus group interviews after the practicum. We conducted two-round focus group interviews with the same participants, all the interviews were recorded with the permission of all participants and transcribed verbatim. Thematic analysis (Clarke & Braun, 2017) was applied in data analysis. The three co-authors analyzed the qualitative data in Chinese, so was the approach of member checking. The themes and excerpts were translated and reported in English.

We practiced intercoder agreement and member checking in order to secure the credibility of the qualitative results. We also followed qualitative inquiry approaches during the whole process of study, including member checking, triangulation and disconfirming evidence reporting (Creswell & Plano Clark, 2017). Meanwhile, an audit trail for the translation of excerpts was applied to ensure reliability by inviting native speakers of English for proofreading.

FINDINGS

The four major themes are teacher knowledge, mentorship, placement school culture and important others.

Teacher Knowledge

Participants reported that their perceived sense of being a teacher during education practicum at placement schools is related to the teacher knowledge - level of acquired knowledge in subject matter, classroom management techniques, instructional techniques, curriculum content, knowing students' needs, and their strengths and shortcomings as a teacher. Moreover, a stronger sense of being a teacher is perceived with the increase in teacher knowledge acquired under the context of placement schools. Student teacher 11 reflected in the education practicum report "I knew, in theory, what to teach to the class. It was the activities like class observations and joining faculty meetings that made me feel better prepared and more confident when teaching the class." The placement school context, as an activity system, under which student teachers advance their comprehension of teacher knowledge while practicing teachers' work (activities). These activities are seen as at the center of transformation into members of the teacher community (Varghese et al., 2005).

Mentorship

For exchanging with the school mentors, almost all student teachers admire and respect their mentor from their placement school. The mentor teachers have given them support on teaching and other practicum works. When asked about the events or the teachers impressed them during your education practicum, one student said, "I feel a lot of common ground with my mentor at practicum school. How he teaches me a lot about what to do in the school, and how it changes my view of being a teacher." Interaction with mentor teachers had a positive effect on their sense of belonging and happiness.

Placement School Culture

Participants talked about their feelings towards the settings that placement school designed for them, including office sharing with mentors and assigned teaching hours, which they reported have facilitated their professional identity construction. "Sharing the same office with our mentors gave me the feeling that I was treated as a teacher rather than a student. I have a strong sense of belonging to the placement school community", student teacher 11 stated in the education practicum report. Through solid community connections and profound associations with each other, student teachers built up a strong consciousness of professional identity.

On the other hand, participants reflected that placement schools seemed to have an established rule of giving student teachers as few teaching assignments as possible, which conflicted with their practicum goals, to influence their professional identity construction. "Due to lack of teaching experience, the placement school avoids giving us too much teaching work, which is totally different from my practicum goal that is improving my teaching ability by having more classes", shared by student teacher 8 in the focus group interview. The excerpt above showed

that before entering the practicum, the student teachers had set their own goals for completing the practicum work. During the practicum, they may encounter the conflicts imposed by the education practicum context. In the activity system of the placement school context, student teachers' goals (objects) could influence them (subjects) from constructing teacher professional identity.

Important Others

Interaction is important for professional identity construct in previous research (Çapan & Bedir, 2019). Peer interaction also happens when student teachers interact with the school context. For instance, student teacher 7 stated in the focus group interview: "My friend and I always discuss what we did at the placement school, and it helps. We would compare what we did at school, and who is more like a teacher. I think that my relationship with my students is also more like a teacher and a friend." Interaction with others has a positive effect on their sense of belonging and happiness.

CONCLUSION

Teacher knowledge, mentorship, placement school culture and important others significantly influence student teacher professional identity construction during their education practicum. Student teachers constructed their teacher professional identity in a continuous process under placement school contexts and were influenced in multiple ways. Teacher education programs in China consist of a theoretical curriculum and practicum curriculum. Teacher education programs need to provide the student teachers more opportunities to connect the theoretical curriculum and the field teaching situations to aid them in continuing the process of constructing teacher professional identity in workplaces (schools). Theoretical curriculum starts in semester one and continues throughout semesters six or seven, leaving a relatively short period of access to field activities such as class observation, workshops, and demonstrations. Increasing ratios of these activities would better prepare student teachers from being overwhelmed when they start education practicum.

REFERENCES

- Beijaard, D., Meijer, P. C., & Verloop, N. (2004). Reconsidering research on teachers' professional identity. *Teaching and Teacher Education*, 20(2), 107–128. <https://doi.org/10.1016/j.tate.2003.07.001>
- Clarke, V. & Braun, V. (2017). Thematic analysis. *The Journal of Positive Psychology*, 12(3), 297–298. DOI: 10.1080/17439760.2016.1262613
- Creswell, J. W., & Plano Clark, V. L. P. (2017). *Designing and conducting mixed methods research* (3rd ed). Sage Publications.
- Davies, B., & Harré, R. (1990). Positioning: The discursive production of selves. *Journal for the Theory of Social Behaviour*, 20(1), 43–63. <https://doi.org/10.1111/j.1468-5914.1990.tb00174.x>
- Danielewicz, J. (2001). *Teaching selves: Identity, pedagogy, and teacher*. State of New York Press.
- Engeström, Y. (2015). *Learning by expanding: An activity-theoretical approach to developmental research* (2nd ed.). Cambridge University Press.
- Lave, J., & Wenger, E. (1991). *Situated learning: Legitimate peripheral participation*. Cambridge University Press.
- Spencer, A. R. (2018). *Impact of a practicum in education course designed to recruit stem majors into a teacher education program*. (Doctoral dissertation). Retrieved from <https://scholarcommons.sc.edu/etd/4502>
- Tomer, G., & Mishra, S. K. (2016). Professional identity construction among software engineering students: A study in India. *Information Technology & People*, 29 (1), 146–172. <https://doi.org/10.1108/ITP-10-2013-0181>
- Trent, J. (2013). From learner to teacher: practice, language, and identity in a teaching practicum. *Asia-Pacific Journal of Teacher Education*, 41(4), 426–440. <https://doi.org/10.1080/1359866X.2013.838621>
- Varghese, M., Morgan, B., Johnston, B., & Johnson, K. A. (2005). Theorizing language teacher identity: Three perspectives and beyond. *Journal of Language, Identity & Education*, 4(1), 21–44. https://doi.org/10.1207/s15327701jlie0401_2
- Wang, H. Y. (2020). Jiaoyushixi dui xueqian shifansheng zhiyexinnian de yingxiang ji duice [Influence of educational practice on teachers' professional belief of preschool normal students and countermeasures]. *Teaching of Forestry Region*. 280(7), 121–124. doi:10.3969/j.issn.1008-6714.2020.07.036
- Wenger, E. (2000). Communities of practice and social learning systems. *Organization*, 7(2), 225–246. <http://org.sagepub.com.libraryproxy.griffith.edu.au/content/7/2/225.full.pdf+html>
- Xu, L. (2011, December 8). *Top 10 normal universities (teachers' colleges) in China*. China.org.cn. http://www.china.org.cn/top10/2011-12/08/content_24105530.htm
- Zhao, M. R. (2013). Xianfurentong, jiegourentong yu jiangourentong -- “shifansheng” shenfenrentong tanxi [Pre-endowed identity, institutional identity and constructive identity -- Analysis of the identity of normal university students]. *Educational Research*, 6, 78–85. <https://kns.cnki.net/kcms/detail/detail.aspx?dbcode=CJFD&dbname=CJFD2013&filena>

me=JYYJ201306010&v=F2I4zIOhSPgsKb6IoJ%25mmd2FcowiRpsK4IuLzYd%25mmd
2FkTFwHcNmnqpDyYW%25mmd2BI4eTHi90cUhVui

Ann-Marie IRELAND, Dublin City University:
 Behind the Mask – Exploring Primary Teacher Vulnerability Within the
 Context of Self-Understanding & the Dilemma of the Arts-Based Approach

ABSTRACT

Within the everyday experiences of primary teachers exist vulnerabilities that the teacher may not always be aware of or consider; and yet these are vulnerabilities that are fundamental to the teaching role. The main aims of this paper are to highlight how the primary teacher responds to these vulnerabilities in both negative and positive ways and to present the methodological dilemma of exploring responses to this phenomenon through arts-based research (ABR) methods within a qualitative approach. The crux of the dilemma presented is that whilst ABR methods may offer key insights, facilitate, illuminate and augment, they also have the potential to foreclose an interpretation along with posing potential risk related to the reflexivity of the researcher.

KEYWORDS: Teacher vulnerability, self-understanding, mask, qualitative, arts-based

THE PHENOMENON OF PRIMARY TEACHER VULNERABILITY

Within everyday teaching experiences exist every day vulnerabilities that the teacher may not always be aware of or consider and yet ‘vulnerability is the way in which teachers live in their job situation’ (Kelchtermans, 1996, pg. 307). Robert Bullough testifies that vulnerability is one of the deep-seated attributes of the teaching role. In fact, he would unequivocally claim that ‘to teach is to be vulnerable’ (Bullough, 2005, pg. 23). This vulnerability has many sources and is responded to by teachers in various ways. *Experiencing* vulnerability can lead to negative responses in the form of self-protection strategies by the teacher (Blasé & Pajak, 1986). *Practicing* vulnerability can create trusting learning environments and promote connection (Lasky, 2005). This exploration of the phenomenon is from the perspective of the primary teacher through a framework that includes self-understanding, subjective educational theory and socialisation factors and seeks to explore if this ‘dual vulnerability response’ has the capacity to directly impact upon motivation, commitment and efficacy.

SOURCES OF TEACHER VULNERABILITY

Whilst in-depth studies into this specific area are quite limited, there are two main bodies of research that document the specific sources of vulnerability; Kelchtermans (1996) analysis of teacher’s professional biographies and Blasé & Pajak (1986) study which is concerned with the everyday political perspective of teachers. The data from the latter study indicated that teachers, through experience over time, developed political strategies to deal with the sources of vulnerability. These findings are similar to those reported by the former study in analysing primary school teachers’ professional biographies. Both studies share a number of key features and connections related to the sources of vulnerability for teachers for example, the data from the study by Blasé & Pajak (1986), indicated that the *School Principal* more than any other group, ‘directly or indirectly contributed to vulnerability and political conservatism in teachers’ (Blasé & Pajak, 1986, pg. 132). This is echoed within Kelchtermans’ work where he names *Professional Relationships in the School* as a main source of vulnerability, referring to authors

Ball, 1987, 1994; Blase, 1991; Altrichter & Salzgeber, 1995, who directly criticize the dominant systems theory approach as it can lead to a teacher finding themselves in what he terms as a ‘micropolitical organizational reality’ (Kelchtermans, 1996, pg. 4), where vulnerability occurs as they feel powerless or politically ineffective (Kelchtermans and Vandenberghe, 1996). Other sources of vulnerability documented between both studies are: *Educational/Administration Policy, The Superintendent and the Board of Education, Colleagues, Parents and Limits to Teacher Efficacy*.

THE TEACHER VULNERABILITY RESPONSE – PROTECTIONIST STRATEGIES

According to Blasé (1986), teachers have six major political strategies to deal with sources of vulnerability. Within each strategy lies numerous complex tactics and behaviours indicating varying levels of reactivity, dependent on external demands or expectations of others for the purpose of protection in the face of vulnerability. They are: *Acquiescence, Conformity, Ingratiation, Diplomacy, Passive-aggressiveness* and *Confrontation*. Referring to Csikszentmihalyi (1993), Bullough in his 2005 study coincides with this strategic protectionist response to vulnerability when he discusses one of the theoretical lenses formulated to summarise his findings; that of a lens of self-confirmation which basically affirms that teachers seek to above all else, ‘keep themselves in an ordered state’ (Bullough, 2005, pg. 32). Indeed Kelchtermans, in his research around self-understanding, vulnerability and reflection in teaching asserts plainly that ‘there is no escape; the particular scholarship of teaching demands that one endures this vulnerability’ (Kelchtermans, 2009, pg. 266). Bullough concurs through deliberation that due to vulnerability being present and the teacher responding by ‘armouring up’ or ‘hunkering down,’ the ‘scholarship of teaching’ can, without awareness of such vulnerability, become the ‘stagnation of teaching’ (Bullough, 2005), which no doubt necessitates further exploration into this phenomenon.

THE TEACHER VULNERABILITY RESPONSE – TRUSTING LEARNING ENVIRONMENTS

While it has been asserted that vulnerability certainly elicits negative responses from teachers which can manifest as micro-political, self-protection reactionary strategies, the duality of vulnerability is certainly an aspect of the phenomenon to be considered. Educators and researchers have written of the need to reflect upon vulnerability on another level; as perhaps a purposeful, positive practice that may enhance teaching and learning environments. Lasky (2005) describes the phenomenon of vulnerability, as studied within an educational context, as ‘an experience of openness and trust which is necessary for love, experiencing compassion, learning and relationship building’ (Lasky, 2005, pg. 901). Likewise, Nias (1989) whilst referring to her extensive work on collaborative school cultures, explains how a collaborative caring culture is actually built on the belief in the value of such openness. This is an important aspect of mutual support; to feel there is a space to ‘express emotions, negative and positive; to admit to failure and weakness; to voice resentment and frustration, along with demonstrating affection’ (Nias, 1989, pg. 235). Emerich France (2017) shares this view in declaring that schools are ‘deserts of shame, lacking space for any sort of vulnerability.’ In fact his hypothesis is that change begins with vulnerability in school environments where young teachers can cultivate their teaching in spaces where risk-taking and making mistakes is not only expected and understood as part of the process, but where this is a solid part of pedagogical practice.

DISCUSSION - ARTS-BASED RESEARCH (ABR) METHODS:

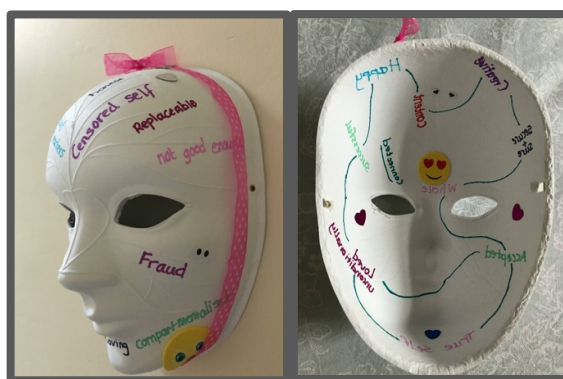
The responses to this phenomenon are being explored through a qualitative study with an interpretative phenomenological approach. Merleau-Ponty (1962), states that ‘phenomenology is the study of essences’ and so the researcher who studies this human experience, collects the data which would normally be in the form of in-depth (and possibly multiple) interviews with individuals. A complex and combined description of the essence of this experience is developed from all of the individuals. This comprises of what they experienced and how they experienced it (Moustakas, 1994). Therefore, in order to gain an entry point into the phenomenon of responses to vulnerability, methods including interviews and diary entries are the suitable choice and within this approach, ABR (Arts Based Research) methods have and continue to be applied in order to elicit a richer data set. For the pilot study, the device of the ‘mask’ was applied, but other planned methods include graphic comic and poetry responses, along with jigsaw and collage creations to be followed by object interviews where the object created is interpreted with a phenomenological approach.

ABR methods carry many advantages, including the capacity to provide an opening into what may otherwise be inaccessible in terms of connection and a deeper understanding of identity (Weber & Mitchell, 1999). Furthermore, researchers have found incorporating arts-based research (ABR) a useful tool to address sensitive topics (Knowles & Cole, 2008). More specifically, in phenomenological methodology, art can be utilized to compliment the methodology by providing insights into human thought through allowing participants to articulate their experience in multiple manners. Within educational research specifically then, ABR supports new perspectives; for example O’Donoghue (2009) professes that ‘arts-based educational research is founded on the belief that the arts have the ability to contribute particular insights into, and enhance understandings of phenomena that are of interest to educational researchers’ (O’Donoghue, 2009, p.352 cited in Cohen Miller, 2018). This indeed fortifies and deepens the resolve in this study to employ ABR methods in order to stimulate fruitful insights and uncover lived experience.

However, whilst ABR methods may offer richer insights, there is the challenge of uncovering these through methods which may facilitate, illuminate and augment but which may also foreclose an interpretation. Thus presenting a dilemma. For the initial pilot study, one of the ABR methods applied was that of the ‘mask’ that would represent the teacher’s presentation of self both inside and outside of school. The participant teachers in separate interviews were each given a blank art mask and were invited to consider how they present themselves to the school community on a daily basis, on corresponding sides of the mask. They were given an unlimited amount of time in a comfortable, safe environment with calming sensory responses taken into consideration; relaxing music playing and incense burning. They were asked to draw and create images, and write on the mask using various art resources provided by the researcher. Weber and Mitchell (1999) discuss the question ‘how do you see yourself as a teacher?’ and suggest that identity construction necessitates image-making which Wilson & Wilson (1979) refer to as ‘an essential characteristic of human sense-making.’ These images can then return and merge back into human experience to be constructed and re-constructed in relation to making sense of an experience. This is echoed by Greenwood (2012), who maintains that working in the aesthetic can be a very effective way of anchoring knowledge, particularly if it involves bodily participation and choice; something which the mask fulfilled. Knowledge held in this way is arguably more ready to be called into action than if it is purely verbally cognitive.

On completion of the creative task, the respondent was encouraged to discuss this experience and the researcher observed, made notes and interjected with relevant follow-up questions all under the proforma or guidelines of an object interview: materiality, practice, biography and intertwining (Holmes & Hall, 2020). There was an undeniable difference between the initial semi-structured interview (which preceded the ‘mask’ method) and the second interview with the specific ABR method of the mask applied. Participants were more relaxed, took ownership of their ‘mask,’ demonstrated a clear desire to discuss their artwork, and during the discussion, revealed their thoughts, feelings and personal experiences in an extraordinary manner. For example, one respondent mentioned repeatedly how the outside of the mask (representing presentation of self inside of school) was not always linked to her authentic self. She even used the word ‘fraud’ and ‘fake’ quite often to describe how she presented herself, whilst expressing herself on the inside of the mask, she used phrases such as ‘accepted,’ ‘true self’ and ‘connected.’ (See Figure 1)

Figure 1. Images of ABR Method – Inside and Outside of Mask: Respondent A



The study provided a strong foundation for further research. For example, as a result of a systematic and thorough thematic analysis on this data (Braun & Clarke, 2013), it was found that there were connections between the participant teacher being vulnerable with a negative reactionary response such as self-confirmation, and abandoning such a response to engage with vulnerability moving towards self-transcendence (willingness to be vulnerable and take risks in order to develop and grow). Advancing on this; the fact that the teacher seems to move along what appears to be a continua; moving towards authenticity and a stronger sense of identity and away from this towards the ‘mask’ or ‘armour,’ self-protection and a safeguarding ‘system,’ could possibly point towards a progression of the former, or a strengthening of the latter, depending on the teacher’s awareness of their vulnerability and sense of self at the time. This has clearly not been proven or disproven in this study but is a theme that emerged; with the possibility of informing a continua framework for the larger study. Therefore, there is no doubt that this ABR method surpassed all expectations, provoking a meaningful and multi-layered narrative, along with providing much deeper insights into the responses to vulnerability. However, the application of such a medium also poses the dilemma of it’s rejection of the dichotomy of doorway versus barrier. The mask may present as both. Whilst it may entice with offers of provocative possibilities to capture, process and mirror life experiences which was undoubtedly the case for this pilot study, it also holds the potential to draw in risk, in terms of participant discovery of self, particularly given the sensitive nature of the topic, along with calling the reflexivity of the researcher into question.

CONCLUSION

ABR methods offer us as qualitative researchers fertile soil for fruitful elicitation in terms of data collection, along with substantial fodder for analysis which can be an alluring prospect. Furthermore, as phenomenological researchers, such methods have the potential to lead us into the deep-rooted thoughts, feelings and lived experiences of the respondent which they may not have even been aware of themselves. However, as has been outlined, there are pitfalls and risks present that may threaten the rigour and reliability of the study. For example, this pilot study raised an important question that, despite apparent rigorous reflexivity on the part of the researcher, had been kept within a hidden ‘blindspot’ during the research design, the question being: does every teacher feel that they are wearing a ‘mask’ within their school life *in the first place*? This was an assumption made by the researcher that then places the validity of the study at risk. Moreover, the inevitable troubling question arises; does the mask act as a symbol with little credibility or is it providing deeper insight into how the teacher is making meaning of their experiences in terms of responses to vulnerability? It has also been offered that the respondent may expose their truth and due to the sensitive nature of the topic, feel vulnerable as a result of the experience. So how can such challenges be responded to effectively and with the well-being of the respondent and the robustness of the research in mind?

Firstly, adhering to ethical procedures, before the participant teacher exits the interview; they should depart well-equipped with the necessary practical resources available to them, along with all assurances that they may withdraw from the study at any time. Within a measured response to these challenges, we might also include a return to the stalwart pillars of disciplined reflexivity which includes clarity in bracketing, detailed reflection and a self-awareness in relation to bias and subjectivity. Whilst a quantitative researcher will look to eliminate bias, the qualitative researcher rejects the notion that bias can be eliminated at all (Rossman & Rallis, 2012). There are responses that can make such an enquiry both more systematic and robust; the researcher knowing who they are and what they are doing in a particular setting is essential. Combined methods (interviews, diary methods and ABR methods), along with providing opportunities of *choice* to the participants; not limiting them to one device (such as the ‘mask’) but offering varied options will strengthen reflexivity and reduce bias or assumptions. In addition to these strategies, practical decisions made during the data collection and analysis, preliminary interpretative ideas and developing insights, difficulties that were solved and how, can be recorded in a researcher’s log (Kelchtermans, 1999). As a result, crucial reflections and observations of the researcher during the process are evident, strengthening not only the rationale for developing strong causal conclusions and valuable interpretations of the meaning given by respondents to the issue or phenomenon being studied, but also ensuring that the process remains rooted within the ethical and moral parameters that are essential for safety, protection and justice to remain present, along with honouring the quality norms of qualitative research, including validity and reliability. Ultimately, we have a responsibility as researchers, at all times and in all circumstances, to remind ourselves of the privilege it is to be privy to such a narrative emerging through such ABR methods for the respondent and to ensure that their voice and story be honoured, respected and protected throughout the process.

REFERENCES

- Blasé, J.J. (2006), *The everyday political perspective of teachers, vulnerability and conservatism*, International Journal of Qualitative Studies in Education, 1(2), 125-142 <https://doi.org/10.1080/0951839880010202>
- Braun, V. & Clarke, V. (2013), *Successful Qualitative Research*, Thousand Oaks, London, New Delhi, Singapore: Sage Publications
- Cohen Miller, A. (2018), *Visual Arts as a Tool for Phenomenology*, Qualitative Social Research, 19 (1), Art.15
- Emerich France, P. (2017), *The Value of Vulnerability*, Educational Leadership, Vol 77 Issue 1, 78-82
- Kelchtermans, G. (1996), *Teacher Vulnerability: Understanding it's Moral and Political Roots*, Cambridge Journal of Education, 26 (3), 307-324 DOI:10.1007/978-94-007-0545-6_5
- Kelchtermans, G. (1999), *Narrative-Biographical Research on Teacher's Professional Development: Exemplifying a Methodological Research Procedure*, Presented to the American Educational Research Association, 1-22
- Kelchtermans, G. (2009), *Who I am and How I Teach is the Message: Self-Understanding, Vulnerability and Reflection*, Teachers and Teaching: Theory and Practice, 15(2), 257-272 <https://doi.org/10.1080/13540600902875332>
- Knowles J. G & Cole A. L. (2008), *Handbook of the Arts in Qualitative Research*, Thousand Oaks, CA, Sage Publications
- Lasky, S. (2005), *A sociocultural approach to understanding teacher identity, agency and professional vulnerability in a context of secondary school reform*, Teaching and Teacher Education 21 (8), 899-916
- Leavy, P. (2018), *Handbook of Arts-Based Research*, New York/London, The Guildford Press
- Greenwood, J. (2012), *Arts-based Research: Weaving Magic and Meaning*, International Journal of Education & the Arts, 13(1) <http://www.ijea.org/v13i1>
- Moustakas, C.E. (1994), *Phenomenological Research Methods*, Thousand Oaks, CA: Sage Publications
- Nias, J. (1999). Teachers' moral purposes: Stress, vulnerability, and strength. In R. Vandenberghe & A. M. Huberman (Eds.), *Understanding and preventing teacher burnout: A sourcebook of international research and practice* (pp. 223–237). Cambridge University Press. <https://doi.org/10.1017/CBO9780511527784.015>
- Rossmann, B. G. & Rallis, S.F. (2012), *Learning in the Field: An Introduction to Qualitative Research*, California, UK, New Delhi, Singapore: Sage Publications
- Weber, S & Mitchell, C. (1996), *Drawing ourselves into teaching: Studying the images that shape and distort teacher education*, Teaching and Teacher Education, 12(3), 303-313 [https://doi.org/10.1016/0742-051X\(95\)00040-Q](https://doi.org/10.1016/0742-051X(95)00040-Q)

Aye Aye MYINT LAY, Eötvös Loránd University
Designing Performance Appraisal Framework for Teacher Educators

ABSTRACT

Performance appraisal is a quality management tool that can provide formative guidance and direction to facilitate and promote faculty growth and improvement. International studies have shown that performance appraisal can motivate teaching, which can affect student success (Andrea, 2011; Dilts et al., 1994). My research project will develop a performance appraisal framework for teacher educators in Myanmar Universities of Education. The purpose of this paper is to present methodological issues of my research project, highlighting on the gap between expectations and what is deliverable. Finally, the possible solutions to these methodological challenges are discussed.

KEYWORDS: performance appraisal, teacher educator

INTRODUCTION

The globalization of the competitive market and the growth of new technologies increasingly need to evaluate the personnel inside organizations (Bogathy, 2007, cited in Arnautu, Panc, 2015). Performance appraisal is simply a measurement tool used for providing feedback to employees about their performance, encouraging performance improvement; determining individual and organizational training and development needs; confirming that good hiring decision is being made; providing legal support for personnel decisions; improving overall organizational performance (Grote, 2002). Within the educational system, it is the ethical need to bring education to a higher level of performance. To improve the quality of the education process, faculty performance appraisal plays an important role (Arnautu, Panc, 2015).

In an era of knowledge explosion, teacher educators must keep up with the ever-changing society with continuous learning with the aim of career development. One of the important components in quality education is staff development for teacher educators. Teacher educators' performance and competence can be developed by their evaluation. In both quality education and educators' competence development, staff appraisal plays an important role. In fact, performance appraisals are means by which an academic organization measures success, identifies problem areas, and monitors progress (Dilts et al, 1994). The validity of the evaluation system used by an academic institution will do much to shape the culture and the quality of the academic outputs of that organization. Hence, PA is a vital element for motivating faculty and improving performance outcomes of organizations such as flexibility, quality and commitment (Bowen and Ostroff, 2004).

According to Karkoulia (2002), the main goals of performance appraisal are job enhancement and professional growth for the individual and in effect for the organization as a whole. Specifically, Duckett (1993) identified nine purposes of PA:

- improve teaching,
- reward superior performance,
- modify assignments,
- protect individuals and organizations,
- validate the selection process,

- satisfy district policy and state law,
- improve decisions,
- provide a basis for career planning and
- contribute to morale and compensation.

Likewise, Fletcher (1993) included administrative and motivational purposes in the list of purposes for teacher evaluation.

Expectancy theory provides a theoretical context to explore teacher educators' motivation to expend effort and increase performance. Vroom (1964) and Porter and Lawler (1968) stated that expectancy theory attempts to explain individuals' motivation to make choices, expend effort and complete a task. According to this theory, motivation consists of three components: (a) high expectation (The individual has the capacity to perform at the desired level), (b) high instrumentality (the behavior will bring expected results and rewards) and (c) high valence (these outcomes include positive personal values) (Göksoy & Argon, 2015). An individual feels motivated when he or she feels that effort will lead to an acceptable level of performance, performance will lead to some degree of outcomes, and the outcomes are personally valued (Isaac, Wilfred, & Douglas, 2001).

Dilts et al. (1994) claimed that faculty performance appraisal suits with the specific needs and missions of the institution to achieve organizational and personal goals. There is no single system of performance appraisal that fits all organizations and thus, universities need to be attempted to tailor their systems to increase the efficiency of the process. Therefore, there is a need for research for developing a performance appraisal framework for teacher educators To improve the quality and performance of teacher educators.

METHOD

I will use a mixed-methods approach to answer research questions. Greene (2007) argue that using a mixed-methods can provide the complementary results about different facts of a phenomenon. In general, complementary is an argument of using both qualitative and quantitative methods to achieve the meaningful and complete outcomes of the study.

Specifically, exploratory sequential mixed methods design is chosen in that there is a two-phase project and the qualitative data is firstly collected. After qualitative data collection and analysis, the researcher will follow up the quantitative results with. One strength of this approach is that concepts grounded in the data obtained from study participants can be easily identified. I will initially explore views by listening to participants and then develop survey questionnaires beased on this qualitative results.

For the first phase of data collection, a purposive sampling method will be used and for the second phase, the entire population of teacher educators in three Universities of Education (480 teacher educators) will be collected. Qualitative researchers can use at least six participants in order to understand the essence of experience (Morse, 1994). In this study, 9 teacher educators and 3 quality managers in three universities will be interviewed with semi-structured interview guide.

I will analyze interview results and use them to design the next step of the quantitative questionnaire. Developed survey questionnaire (to form Likert-type items and scales for the follow-up questionnaire) will be used in the second phase. The agreement level of each item included in the questionnaire by various educators will be analyzed by descriptive statistics to

explain the major indicator of performance appraisal. Exploratory factor analysis of survey data will lead to identify and validate the major areas and teacher performance indicators.

DISCUSSION

Initially, the researcher planned to use a mixed-method research design (exploratory sequential mixed methods design) to achieve the meaningful and complete outcomes of the study. Specifically, the researcher planned to conduct interviews and a survey with a target population of around 480 teacher educators. However, I have faced some dilemmas in conducting research-related activities. Firstly, the COVID-19 pandemic poses some methodological dilemmas such as limits to the feasibility of mixed-method research, its timescale.

Actually, in this challenging COVID-19 period, the postgraduate students or staff cannot conduct research activities, including experimental-based researches that require physical experimentation in laboratory facilities and community-based researches (no face-to-face data collection can be done). The COVID-19 pandemic makes me extremely difficult to ensure continuity of ongoing research due to social distancing and shutdowns nationwide. I need to find approaches to cope with restrictions and shutdowns.

Consequently, like other researchers, I have encountered some frustrations including feeling unproductive and unable to continue carrying out research work with a planned schedule and being homebound and less active. At the same time, levels of self-perceived productivity dropped and levels of stress increase during times of lockdown compared to before. Because of these psychological impacts on me, my research progress was slow.

Next, the current situations in Myanmar make it extremely difficult to collect survey data. Myanmar was under the military coup on the 1st of February 2021 and acts of civil disobedience, labor strikes are emerging within the country, in opposition to the coup. Universities are closed now and their re-opening is uncertain. Moreover, mobile data, which is the main source of internet access, has been cut nationwide. Because of these difficult circumstances in Myanmar, I need to consider ethical and methodological aspects of my research.

According to Carter and Little (2007) and Simons et al. (2008), we should argue for unique methodological solutions that suit particular research situations. As the COVID-19 pandemic and research context greatly influence my research trend, my research design will be changed focusing on the validity of the research. Due to these situations, the researcher will leave the quantitative part out of the research since questionnaires may not be sent and returned in relevant numbers of participants. The chosen research tools are semi-structured interviews, document analysis and literature review. The researcher will conduct 25 interviews to education experts, heads of department, teacher educators currently working at two Universities of Education in Myanmar. The researcher will review and analyze the similar frameworks of performance appraisal of other countries, the teacher competency framework and educational development policies of Myanmar. Based on the results of the interviews and document analysis, a comprehensive performance appraisal framework will be developed.

The concern related to methodological choice is that it will not generate statistical evidence or a quantitative discussion as this is a qualitative study. This research will not provide the generalized results of the large representative sample and a literal interpretation of the rationale.

CONCLUSION

This paper was written to discuss methodological issues, including the gap between the practices and assumptions that I have, and present the ways to overcome the challenges. Due to the COVID 19 crisis and some political issues in the research context, there is limited access to study participants in my research project. The researcher is carefully reflected on methodological change and transformation and accounted for when describing research processes. While considering professional ethic and researcher role, this methodological decision is based on careful analysis and accounting of methodological changes. In summary, the consequences of the COVID 19 crisis and challenging political issues cause some methodological dilemmas, the researcher will embrace with a resolute research effort to overcome these dilemmas.

REFERENCES

- Arnautu, E. Panc, I. (2015). Evaluation Criteria for Performance Appraisal of faculty Members. *Procedia - Social and Behavioral Sciences* 203, 386 – 392
- Bowen, D. E. and Ostroff, C. (2004). Understanding HRM–firm performance linkages: The role of the “strength” of the HRM system. *Academy of management review*, 29(2), 203-221.
- Carter, S., Little, M. (2007). Justifying knowledge, justifying method, taking action: Epistemologies, methodologies, and methods in qualitative research. *Qualitative Health Research* 17(13), 16-28.
- Dilts, D. A., et al. (1994). *Assessing what professors do: an introduction to academic performance appraisal in higher education*. Greenwood Press, USA.
- Duckett, W. R. (1993). Planning for the evaluation of teaching. *Phi Delta Kappan*, 79(3).
- Göksoy, S. & Argon, T. (2015). Teacher Views on Performance and Rewards in the Framework of Expectancy Theory. *Journal of Educational Sciences Research*, 5(2), 143-164. <http://ebad-jesr.com/>
- Greene, J. C. (2007). *Mixed methods in social inquiry*. San Francisco, CA: Jossey-Bass.
- Isaac, R. Z., Wilfred, J. P., & Douglas, C. (2001). Leadership and motivation: The effective application of expectancy theory. *Journal of Managerial Issues*, 13(2), 3045-3695
- Kipgen, N. (2021). The 2020 Myanmar election and the 2021 coup: deepening democracy or widening division? *Asian Affairs* 52(1), 1-17.
- Morgan, D. L. (2014). *Integrating Qualitative and Quantitative Methods: A Pragmatic Approach*. Thousand Oaks: Sage.
- Omona. J. (2013). *Sampling in Qualitative Research: Improving the Quality of Research Outcomes in Higher Education*. Retrieved from Sep 14, 2019, <file:///D:/From%20Download/90214-226365-1-PB.pdf>
- Satio, E. (2021). Ethical challenges for teacher educators in Myanmar due to the February 2021 coup. *Power and Education*, Vol. 0(0) 1-8.
- DOI: 10.1177/17577438211037202
- Simons, L., et al. (2008). Shifting the focus: Sequential methods of analysis with qualitative data. *Qualitative Health Research* 18(1), 20-32.
- Tashakkori, A., & Teddlie, C. (2008). *Mixed Methodology: Combining Qualitative and Quantitative Approaches*. Thousand Oaks: Sage Publications.

Moet Moet MYINT LAY, Eötvös Loránd University
Continuous Professional Development and Quality Teacher Education in
Myanmar

ABSTRACT

In the 21st-century, attention has been given to work, identity and professional development in the education sector. The paper aims to explore an in-depth understanding of the continuous professional development for teacher educators focusing on improving the teachers' training program in Myanmar. The qualitative method was conducted in this study through semi-structured interviews. First of all, professional development is continuous learning for teaching careers. They need to be involved in different activities such as professional conversation, lessons study, school visits, peer review, and in-school discussion. The second is not enough resources. Especially, teachers do not have enough time, money, and technical resources to study for their professional development. Third, teachers in Myanmar tend to have shorter training days, and the shortage of training teachers, there is dissatisfaction with the current teacher training programs. The development of the skills of teachers in education colleges requires the implementation of adaptive and innovative teaching methods and academic achievement. This study concludes with the practical implications recommending the urgent need for CPD of teacher educators.

KEYWORDS: continuous professional development, teacher educator

1. INTRODUCTION

Education is the single most important founder of a nation's development. Education aims to produce qualified and well-developed citizens. The development of the education system depends on the quality of the learner and the quality of the teachers. Therefore, teachers play a crucial role in building a modern developed nation. All countries have prioritized teacher education, recognizing the importance of improving the quality of teachers for raising the quality of education and student learning outcomes.

Currently, Myanmar has a shortage of teacher's problems such as lack of teacher quality. In education, there are enough qualified teachers who can produce all-around development of students. In practice, there are some professional development activities for teacher educators in Myanmar. However, the previous studies showed that the Ministry of Education in Myanmar needed a capacity-building program for teacher educators (Jennings, 2019). These findings stated that the current priorities need to enhance the teacher educator's capacity and administration staff training. According to the findings of Borg, Clifford, and Htut (2018), Myanmar teacher educators have the willingness to try their CPD even though they have difficulties (such as teacher knowledge, confidence, and reflection). They also pointed out that teacher educators need to study the continuous professional development activities in their fields. There has been limited research into teacher educators' CPD activities in Myanmar from the viewpoint of professional development during one's career regarding lifelong learning. Therefore, this study highlights the need to improve the quality of teachers for the development of Myanmar's education system.

2. LITERATURE REVIEW

Much has been written about professional development; what it ‘looks like, how it occurred over the last few decades. Teacher professional development means teachers’ learning, how they learn to learn and how they apply their knowledge in practice to support pupil learning (Avalos 2011). Effective professional development programs can motivate teachers to participate in teaching events that compete with their students and create teacher learning forums (Bacchus & Grove, 1996). From this perspective, the teacher’s development of motivation to learn plays a crucial role in their professional growth.

Kennedy (2005) identified nine models of teachers’ CPD in international literature, focusing on supporting professional autonomy and transformative practice. These teacher-based models (training; award-bearing; deficit; cascade; standards-based; coaching and mentoring; community of practice; action research; transformative) have been applied to the literature on teacher educators’ professional learning (Bates, Swennen, and Jones 2011; Beauchamp et al. 2015). On the other hand, Schuck, Aubusson, and Buchanan (2008) stated that professional, progressive discourse, mutual respect, risk-taking, a determination to improve are factors cited as essential for effective professional learning.

The EU Council prioritizes the sustainable development of people's lifelong learning and continuous professional development by the Lisbon Strategy (Council, 2000). According to the OECD (2000, p. 403), life-long learning or continuing professional development means to obtain new knowledge and new skills for a current or a future job, to improve salary, and to get the career opportunities in a current or another field by the systematic education and training activities.

Not surprisingly, Heaney (2004) suggested that teachers need enough time to strengthen and expand their teaching using new knowledge and skills. Furthermore, the effectiveness of continuing professional development needs relevant financial resources. The resources enable teachers to improve their teaching, providing the necessary equipment essential for the improvement of the teaching-learning process (McCaughtry, Martin, Kulinna & Cothran, 2006). Significantly, Evan (2018) explained professional development as the process whereby people’s professionalism may be considered with a degree of permanence that exceeds transitoriness and professionalism collectively incorporate the perceptual, procedural, processual, motivational, epistemological, productive, evaluative, comprehensive, rationalistic, analytical and competently dimensions.

3. AIMS OF THE STUDY

The purpose of this study is (1) to explore teacher educators’ perspectives on continuous professional development about enhancing teaching quality, and (2) to identify the challenges concerning CPD of the teacher educators in Myanmar Education Colleges.

4. METHOD OF THE RESEARCH

Among the 25 teacher education colleges in Myanmar, Monywa education college has been investigated in the study. The study included semi-structured interviews with three male

instructors and three female lecturers between the ages of 30 and 45 from Education college. Currently, Myanmar has been under a military coup since February 1, 2021. The military coup has caused a great deal of rebellion in the country. It has taken many movements, including civil disobedience. After the military coup, the government cut off the entire mobile internet of the main communication network to contain the rebellions. In addition, the COVID-19 outbreak in Myanmar has closed schools, locked down in most townships, and made it difficult to interview teachers and conduct any research. So, I choose only one Education College for this study.

The participants were self-selected and assumed to be a random sample as they encompass teachers from different years of teaching experiences and various subject areas. The researcher used semi-structured interviews. The semi-structured interviews were conducted face to face and recorded with a recorder and lasted between 30-45 minutes. This process is flexible and allows only partially representative of a population. I collect and record with participants to understand the participants' points of view. However, it might be a bit difficult the interpretations and data analysis of the process for the beginning researcher. Only then, I also interpreted their answers correctly by thematic analysis to identify patterns of themes in the interview data. In doing so, I frequently check that they understood my questions. I analyzed all the interviews and made the judgment to identify the key points or opinions. Moreover, the researcher needed to conclude and suggest solutions for their challenges and their perspectives of the continuous professional development by their career pathways.

5. DISCUSSION

5.1 UNDERSTANDING OF CPD

This study was to examine the understanding and perceptions of teachers in the College of Education (CPD). The current study found that CPD refers to the involvement of teachers in a variety of activities, such as attending training, participating in peer review, lesson study, subject discussion, workshops, and seminars.

To examine the understanding of the Teachers' perception asking the questions, give their comments, and discuss. One of the interview questions is What is CPD? What do you know about CPD? According to participants A and C,

“CPD activities are necessary for every school and college to support teacher and teacher educator's professional development. It is important factors of CPD to invest the skills and teachers' competence can be achieved through CPD activities” (A).

“I think CPD is beneficial to my teachers. It helps them to increase their knowledge and skills” (C).

They reported that there were benefits of CPD for both teacher educators and students. They believed the impact of CPD was mentioned to improve teaching learning skills and student learning experiences. It was recognized by the teacher educators that CPD is necessary for teachers to be prepared for their teaching work, reflect upon their teaching practices, discuss with peers and enhance their skills throughout their careers.

CHALLENGES OF CPD

One of the interview questions is “What are the main challenges of CPD in College?”

On this question, I found that teachers faced many challenges for their professional teacher development. The reasons are the lack of teacher-student ratio, lack of time, and insufficient resources such as short training and lack of technology to develop the teaching skills in Myanmar education colleges. In the views of participants,

“Education colleges provided many types of CPD, not just limited to short courses or programs, were offered to teacher educators. Group discussion, observation, action research were examples of opportunities provided to teachers inside and outside of the college” (A, B, D, G).

“College included 70 students in one class. The situation makes teachers busy. I think they are ineffective. Teacher educators are not able to participate in the professional development activities due to excessively heavy workloads” (A and I).

Of the results, the government do not make sufficient funding to support the CPD in the content areas of subject knowledge, the planning of the curriculum, use of ICT, and teaching and learning strategies. Teachers needed the use of e-library, the teaching of inclusive education, with disabilities and teaching children in a language that is not their mother tongue, assessment skills (formative and summative), facilitating the practicum, mentoring, and coaching for their professional development. Also, the teacher educators have minimal time and opportunities to engage in professional development activities inside and outside of the college.

Moreover, teachers argue that most training courses are ineffective and insufficient for their professional development. The duration of a training program for one time or two times for one month. It was important that the educational institutions and the Education Colleges must have needed the capacity to provide both pre-service and in-service CPD.

6. CONCLUSION

As a broader study aimed at developing teachers' CPD, the initial findings are beneficial for teacher education in Myanmar. Now, Myanmar Education College upgraded to a quality level. The most important issue for teacher educators' CPD in Myanmar is limited funds and resources. Teacher educators need to provide support, allocate funds and ICT resources, sufficient time, salary, motivate their teachers, and evaluate the effectiveness of CPD of the highest value.

However, this study has several limitations including the unavailability of reference materials from Myanmar. The first limitation of this study is that the results of semi-structured interviews are more about their perspectives rather than their behavior. The second limitation did not study classroom practice as a result of the CPD changes in the classroom. Finally, the six participants of sample sizes do not represent the voice of all teachers at the Myanmar Education Colleges. Therefore, further research should be undertaken with a sufficient sample size to explore a deeper understanding of quality teachers and the roles of principals for gaining insight into effective CPD in Myanmar.

REFERENCES

- Bacchus, F., & Grove, A. J. (1996). Utility independence in a qualitative decision theory. *KR*, 96, 542-552.
- Bates, T., Swennen, A. & Jones, K. (2011). *The Professional Development of Teacher Educators*. London: Routledge.
- Beauchamp, G., et al. (2015). *Teacher Education in Times of Change*. Bristol: Policy Press.
- Borg, S., Clifford, I. & Htut, K. P. (2018). *Having an EfECT: Professional development for teacher educators in Myanmar*.
- Council (2000). 'Presidency conclusions', Lisbon European Council (23 and 24 March 2000). Available at http://ue.eu.int/ueDocs/cms_Data/docs/pressData/en/ec/00100-r1.en0.htm (accessed January 2021).
- Evans, L. (2018). Implicit and informal professional development: what it 'looks like', how it occurs, and why we need to research it, *Professional Development in Education*.
- DOI: 10.1080/19415257.2018.1441172
- Frank, K.A. et al. (2011). Focus, Fiddle, and Friends: Experiences that Transform Knowledge for the Implementation of Innovations, *Sociology of Education*, Vol. 84, No. 2, pp. 137 – 156.
- Gray, S. L. (2005). *An enquiry into continuing professional development for teachers*. Cambridge: Esmee Fairbairn Foundation.
- Hargreaves, D. (1999). The Knowledge-Creating School, *British Journal of Educational Studies*, Vol. 47, No. 2, pp. 122-144 7.
- Heaney, L. (2004). Leading professional development: a case study. *International Journal of Educational Management*, 18, 37-48.
- Kennedy, A. (2005). "Models of continuing professional development: models of analysis." *Journal of In-service Education*. 31 (2), 235–250.
- Jennings, James, International Consultant, (2019): *Report of Phase I of Consultancy on Development of National Continuing Professional Development Framework for Management Staff and Teacher Educators in Education Colleges in Myanmar*.
- McCaughy, N., Martin, J., Kulinna, P. & Cothran, D. (2006). What Makes Teacher Professional Development Work? The Influence of Instructional Resources on Change in Physical Education. *Journal of In-service Education*, 32, 2, pp.221-235.
- OECD (Organization for Economic Co-operation and Development) (2000). *Where Are the Resources for Lifelong Learning?* (Paris: Organization for Economic Cooperation and Development).

Nóra NÍ BHEAGLAOICH, *Mary Immaculate College* Generating and Gathering Data through Action Research

ABSTRACT

This paper reports on the proposed data collection and generation methods to be utilised during a small-scale action research PhD study located in the Republic of Ireland. The research explores the specific knowledge base and competencies necessary for teachers to implement a Content and Language Integrated Learning (CLIL) approach to additional language teaching. Grounded in the constructivist paradigm, action research as a qualitative approach will allow the researcher to actively engage with and observe the teacher participants as they plan, enact and review CLIL lessons through classroom research (Cohen et al., 2018). Initially, the researcher will design and deliver a professional development (PD) module encompassing CLIL pedagogy to develop specific teacher competencies with CLIL. A community of practice (CoP) model of PD (Wenger, 2000) will be adopted to allow the teachers to interact, share ideas, celebrate pedagogic gains and tease out emerging challenges to enhance the shared group goal of effective CLIL pedagogy. Qualitative data collection using an action research methodology is an essential feature of the research process to provide a thick description (Cohen et al., 2018) and document the emerging data either both orally or in written form to collect evidence and report on research-based practice pertinent to the research question. Consequently, the justification of data collection methods which include a reflective diary, focus group interviews and direct observation are explored. Reference is also made to possible methodological dilemmas which may arise during the research as well as possible solutions to these emerging obstacles using the data collection methods used.

KEYWORDS: Content and language integrated learning, teacher knowledge base, language awareness, balancing content and language

BACKGROUND TO THE STUDY

The aim of this study is to document the experiences of eight teachers as they implement a CLIL approach while teaching mainstream mathematics (as a content area) through Irish as a second language (L2). Eight early childhood educators from eight English-medium elementary school settings will participate in this action research study. CLIL is expressed in the literature as a dual-focused educational approach which an additional language is used to teach language and content (Coyle et al., 2010). The symbiosis between language pedagogy and the CLIL classroom is attracting increased interest in the Republic of Ireland due to its prominence internationally (Cammarata and Ó Ceallaigh, 2020). This research hopes to address a lacuna identified in the literature due to limited research on CLIL pedagogy in Ireland relating to the necessary practical knowledge base, competencies or teaching strategies required for elementary teachers to overcome practical dilemmas when implementing CLIL through Irish in English-medium schools. The literature identifies that a CLIL approach provides a more favourable context for L2 learning, through a balancing act of content and language (Mehisto *et al.* 2008; Lightbown, 2014). The success of a CLIL approach, however, depends on achieving a content and language equilibrium by scaffolding students with relevant and necessary language to develop content knowledge, skills, and dispositions effectively (Tedick and Lyster, 2020). Juggling content and language simultaneously incorporates an uncharted

knowledge base for teachers which involves significant professional development in CLIL pedagogy for the novice CLIL teacher (Lo, 2020).

To clarify, teacher education in the form of PD opportunities is crucial to achieve success for CLIL as concrete guidance is required to coach and scaffold teachers on how best to frame and shape CLIL pedagogy as practitioners (Lo, 2020; Ó Ceallaigh et al., 2019). It necessitates incorporating a heightened focus on language awareness or more specifically, the enhancement of language sensitivity or expertise essential for target language and subject teaching success (Cammarata and Ó Ceallaigh, 2020). Currently, elementary teachers have little or no training or guidance in CLIL pedagogies (Fahey, 2021). To this end, the research design and methodology for this research are selected to attain relevant data pertaining to the teacher's required knowledge base and evolving practice stemming from PD practices in CLIL. The goal of the research is that by engaging in a community of practice (CoP) participatory model of PD, the participants will be presented with favourable conditions and additional pedagogic prospects for success while implementing a CLIL approach. Teacher knowledge will be co-constructed socially when liaising with teachers with a common pedagogic goal and who face similar CLIL implementation dilemmas. It is anticipated that ongoing dialogue, exchanging thoughts, pooling ideas, exploring pedagogic progress and teasing out emerging context-embedded challenges shall enhance the shared group vision of operationally sound CLIL pedagogy.

ACTION RESEARCH METHODOLOGY

This research is socially situated and is, therefore, nested within the constructivist paradigm. Personal accounts from the participants will be sought based on the social context of the classroom to gain insights and an interpretation of the knowledge base necessary for implementing CLIL in practice. Additionally, this research is socially bound and harmonious with the selected paradigm as shared professional development opportunities using a community of practice (CoP) model will be adopted throughout (Wenger, 2000). To clarify, the researcher shall actively engage with and observe the participants as they plan, enact and review CLIL lessons to bridge the gap between theory and practice (Elliott, 1994). Furthermore, shared socially organized professional collaboration opportunities will allow the researcher to explore CLIL implementation through unpacking evidence-based practice to interpret and tease out the participants' growing wisdom and their evolving practice as they implement CLIL as a novel additional language teaching approach (Lo, 2020). Moreover, opportunities for implementing necessary changes to practice will be sought and agreed as thoughts are pooled and new opportunities generated for enhanced CLIL pedagogy. While an in-depth discussion on the selected paradigm goes beyond the scope of this paper, an unpacking of the research methodology is necessary to justify the proposed data generation and collection methods used.

To that end, action research is the methodology selected for this research as it's characterized as a rich, fluid and varied method which is used increasingly in educational research (Elliott, 1994; Flick, 2009). According to Stringer and Aragon (2021) action research is action-oriented and affords participants opportunities for reflection which in turn enables them to engage with and find effective, practical solutions to the unresolved questions that arise during their ongoing professional practice. This action-oriented process involves developing an evidence-informed plan, enacting it in practice, monitoring its effectiveness and reflecting on action (Brown and Rogers, 2017). This project will provide opportunities for the researcher to adapt, alter and fine tune CLIL implementation during two action research cycles which will occur over one school

year. Overall, action research provides a collaborative opportunity for a group of schools to resolve experience-based issues (Stringer and Aragon, 2021) which has methodological significance for this research. The participating teachers are key actors in the theory development process providing qualitative CLIL- related evidence for the researcher. It is therefore critical that appropriate data collection methods are identified.

DATA COLLECTION METHODS

This section of the paper considers the data collection strategies which were guided by the principles of action research for the researcher to liaise qualitatively with the participants to generate oral or written data pertinent to the research question. CLIL implementation is embedded in teacher pedagogy (Genesee and Hamayan, 2016), therefore, close contact with the research participants was necessary to collect evidence based on CLIL practice by liaising with them individually, in focus groups discussions and collaborating during PD CoP sessions. Data of a qualitative nature is required as non-numerical evidence will generate and collect evidence pertaining to the CLIL-related experiences, perspectives and thought processes of participants. Multiple data collection methods including observation, a reflective diary and focus group interviews (Stringer and Ortiz Aragón, 2021) were deemed suitable as methods which support reflective thinking processes. Such reflection is invaluable in action research to generate accurate data from an inductive and triangulated perspective as emerging revelations during implementation cycles will act as a springboard to finetune the intervention and carry out specific amended actions associated with the CLIL pedagogy. A qualitative approach allows the researcher to mentor the teachers to implement actions and identify consistencies or inconsistencies (Elliott, 1994) and make suggestions to try alternative forms of action. A brief justification for each data collection method is summarized in table 1.

Table 1. Data Collection Strategies

Focus Group Interviews: Interact subjectively with participants to collect data. Elicit views and opinions of participants.	Observation: Take field notes on behavior/attitudes of participants during research. Observe differences in practice over time.	Reflective Diary: Participants as active agents in the research generate data from personal insights Think, reflect, analyze. Record actions/practical solutions during the research.
---	---	---

The methodological significance of the data collection methods listed above is that the researcher seeks to gather evidence in relation to practising teachers and how they confront and resolve the challenges of fusing content and language pedagogy through a CLIL approach. The data collection methods provide qualitative opportunities to explain incidences and document events as they unfold but moreover, they allow the researcher to tease out possible reasons for various occurrences and collect vignettes of evidence to explain them (Flick, 2009). By interacting subjectively with the participants during focus group interviews and collecting group-generated data, liaising with participants during observation visits and through collecting data in the reflective diary, rich descriptions can be used as a genesis to advance the

research during the action research cycles. Using multiple data sets as illustrated with the sound principles of action research will allow the researcher to successfully address the research aim which seeks to advance CLIL pedagogy by exploring insights on how practice evolves and develops and identifying how both can be achieved. Additionally, triangulated data will be generated (Creswell, 2009) which acts as a springboard to carefully cross reference and identify possible tensions or subtle errors in the data analysis process. It's noteworthy that data collection and analysis in action research is rigorous and time-consuming for researchers, therefore careful attention to detail is needed to interpret the data cautiously and avoid distortion or misrepresentations during data analysis. Triangulating data can avoid inaccuracies to ensure that pedagogic gains in CLIL pedagogy can be identified, celebrated, and further developed. Moreover, it allows the researcher to verify from multiple data sets.

METHODOLOGICAL DILEMMAS AND SOLUTIONS

Some methodological dilemmas are associated with the study which will now be considered, and possible solutions to overcome these challenges throughout the data collection and generation process will be presented. Firstly, teaching a curriculum area through the medium of Irish using CLIL in English-medium schools in Ireland is an evolving research field and a novel pedagogic approach for existing teachers. The implementation of the research requires participant commitment of one school year therefore, a possible constraint may be striking a balance between sourcing consenting teachers to participate in this research due to inadequate competence to teach mathematical language through the Irish language and finding a sample representative of different English-medium school contexts in Ireland (urban, small rural schools, socially disadvantaged etc), the discussion of which goes beyond the scope of this paper. To address this dilemma, the researcher needs to provide reassurance of ongoing support for prospective participants and establish a research agenda according to their mentoring needs, experiences and perspectives. Moreover, a positive rapport between the researcher and the research participants is essential to avoid undue pressure and resolve pedagogic issues as they emerge, some of which may be context bound and will need individual decisions based on particular circumstances in different school contexts. To resolve this dilemma, it is crucial that the researcher keeps abreast of new information as it emerges from the data during the research, by providing ongoing opportunities for dialogue so participants can express their thoughts freely without judgment or constraint. Such dialogue during CoP sessions, onsite and by liaising regularly with the participants will inform the researcher of pedagogic gains/challenges which arise or where tensions exist in the data and make amendments to the intervention as necessary. As participants co-construct meaning through dialogue and collaboration, opportunities will be available for the researcher to keep an accurate record of new information. This record will be used to inform data collection processes. These emerging data will also act as a springboard to coach and scaffold teacher learning by listening to the practitioners' perspectives about CLIL pedagogy and unpacking pressing queries through the action research cycles.

In terms of CLIL implementation, the literature identifies that an evolving knowledge base of teacher language awareness is an aspect of CLIL which is essential in classroom contexts for effective CLIL implementation; therefore, steering this goal will be an ongoing target of the research process during PD opportunities. It is understood that challenges arise with regard to balancing cognition in the content area in tandem with progression in language development (Cammarata, 2016). The ongoing challenge for the researcher will be to enable participants to

develop competencies to tackle the dual dilemma of balancing content knowledge with language development during instruction. The data collected in the form of fieldnotes, transcripts or direct observation is crucial to identify tensions and possible solutions to balance these tensions by seeking and providing solutions collaboratively during PD sessions. The collaboration will allow for teacher preparation, mentoring and scaffolding which are key to success during CLIL implementation. Time poor, inadequately trained or unsuitably prepared teachers may find it challenging to implement an integrated content and language CLIL programme. Finding an equilibrium between language and content may be onerous if they have insufficient knowledge of CLIL-specific pedagogies or second language learning theories. To overcome this dilemma, the research process needs to be carefully aligned with teachers' needs, perspectives and experiences, and sufficient time needs to be allowed for the teachers' knowledge base to evolve to progressively integrate CLIL into practice on a gradual basis. This can be facilitated during PD sessions also which can explore the theoretical underpinnings of CLIL, unpack the pedagogies aligned with this approach and establish sound pedagogic strategies based on best practice to implement CLIL in an Irish educational elementary context. Once more, the data generation and collection strategies selected will provide the researcher with key nuggets of information when liaising with participants to steer, refine and amend the PD programme and develop a sound pedagogic approach based on best practice emerging from the participants experiences.

Overall, it's worth noting that the researcher needs to be competent on how to execute each data collection method to gather fruitful evidence based on the pedagogic knowledge that needs to be constructed during CLIL implementation and generate theory based on the interpretation of this evidence using categorizing, coding and identifying themes (Flick, 2006). A poor questioning style (irrelevant questions posed) during focus group sessions or inadequately planned observation sessions (where the researcher may be unsure of the evidence being sought in terms of best practice in CLIL) could yield poor data results. To address this possible shortcoming, a robust observation 'check list' developed and adapted from existing literature incorporating the core elements of a CLIL lesson (Genesee and Hamayan, 2016; Tedick and Lyster, 2020) is essential to recognise CLIL teacher competencies. This will assist the researcher identify examples of best practice in situ and document a constructive narrative on which consequence emerges from different CLIL interventions. As a final point, robust ethical guidelines are essential throughout the data gathering and generation process as the researcher will be working closely with the participating teachers and observing CLIL lessons being taught in classrooms. Research integrity is a widely documented feature of research (Denzin and Lincoln, 2018). Researchers are responsible for engaging in good research practices by ensuring balance when reporting on research, displaying honesty, integrity and always protecting the anonymity of participants when documenting, engaging with participants and reporting on the research findings (Cohen et al. 2018). As a result, ethical consent will be sought from the university, school leaders, participating teachers and parents of children in selected classes. Furthermore, all members associated with the research will be informed about the rationale for the research, the structure of the research, the dissemination of findings and procedures involved in data generation, collection and storage of data (Cohen et al. 2018; Creswell, 2009).

CONCLUSION

This paper gives an account of the research which seeks to unravel the specialized knowledge base required to fill a lacunae in the literature and inform educational policy around teaching Irish as a second language using a CLIL approach in Ireland. An action research intervention drawing on qualitative data generation and collection methods is discussed when teaching mathematics through Irish in an English-medium elementary school using CLIL. The researcher will work closely with the participants to gain an insight into their experiences as they implement CLIL and engage in pedagogic transformation (Elliott, 1994), hence justifying the selection of an action research methodology for theory generation (Elliott, 1994). The data collection methods which include participant observation, focus group interviews and a reflective diary are subsequently presented and the methodological considerations relating to possible dilemmas and solutions while generating a narrative account of the intervention process from the participants' perspective is explored. Finally, ethical considerations are presented as an essential feature of research. To conclude, the qualitative nature of this study presents some limitations in terms of generality as the sample size is small and context bound therefore, more research may be required using a larger sample size in the future. As a first study of its kind to explore the teaching of mathematics using CLIL in an early childhood setting in English-medium schools in Ireland, it will generate thought-provoking data to explore possible approaches and solutions to CLIL implementation as a novel approach in Ireland. Additionally, it will identify the benefits and possible limitations of a CoP approach to professional development in CLIL which may determine PD models for CLIL teacher training going forward.

REFERENCES

- Brown, J. D. & Rogers, T.S. (2017). *Doing Second Language Research*. Oxford.
- Cammarata, L. (2016). *Content-Based Foreign Language Teaching: Curriculum and Pedagogy for Developing Advanced Thinking and Literacy Skills*. Routledge.
- Cammarata, L., & Ó Ceallaigh, T. J. (2020). *Teacher Development for Immersion and Content-Based Instruction*. John Benjamins.
- Cohen, L., Manion, L., & Morrison, K. (2018). *Research Methods in Education* (8th ed.) Routledge.
- Coyle, D., Hood, P., & Marsh, D. (2010). *Content and Language Integrated Learning*. Cambridge University Press.
- Creswell, John. (2009). *Research Design: Qualitative, Quantitative and Mixed Method Approaches* (3rd ed.). Sage.
- Genesee, F. & Hamayan, E. (2016). *CLIL in Context: Practical Guidance for Educators*. Cambridge University Press.
- Elliott, J. (1989). Educational theory and the professional learning of teachers: an overview, *Cambridge Journal of Education*, 19(1), 81-101. DOI: 10.1080/0305764890190110
- Elliott, J. (1994). Research on teacher's knowledge and action research, *Educational Action Research*, 2(1), 133-137. DOI: 10.1080/09650799400200003
- Fahey, P. (2021). *CLIL to support Teacher Language Awareness in the Irish Language in English-medium Primary Schools: An Analysis of the impact on Second Language Teaching and Learning Competency*. PhD in Education, Mary Immaculate College, Limerick, Ireland.
- Flick, Uwe. (2006). *An Introduction to Qualitative Research* (3rd ed.). Sage.
- Lightbown, P.M. (2014). *Focus on Content-Based Language Teaching*. Oxford University Press.
- Lo, Y.L. (2020). *Professional Development of CLIL Teachers*. Springer.
- Mehisto, P., March, D., & Frigols, M.F. (2008). *Uncovering CLIL: Content and Language Integrated Learning in Bilingual and Multilingual Education*. Macmillan Education.
- Myles, M., Huberman, M., Saldaña, J. (2019). *Qualitative Data Analysis: A Methods Sourcebook* (4th ed.). SAGE Publications
- Ó Ceallaigh, T.J., Ó Laoire, M. agus Uí Chonghaile, M. (2019). *Comhtháthú Ábhar agus Teanga san Iarbhunscoil lán-Ghaeilge/Ghaeltachta: I dtreo Eispéiris Forbartha Gairmiúla chun Dea-chleachtais a Nochtadh*. Dublin: An Chomhairle um Oideachas Gaeltachta agus Gaelscolaíochta.
- Stringer, E. T., & Ortiz Aragón, A. (2021). *Action Research*. SAGE Publications.
- Tedick, D. & Lyster, R. (2020). *Scaffolding Language Development in Immersion and Dual Language Classrooms*. UK: Routledge.
- Wenger, E. (2000). *Communities of Practice: Learning, Meaning, And Identity (Learning in Doing: Social, Cognitive and Computational Perspectives)*. Cambridge University Press.

Luka PONGRAČIĆ, University of Slavonski Brod
 Role of Adolescent Development in the Socialization Process during
 Preadolescence Life Period

ABSTRACT

The beginning of adolescence is a turbulent period for every person, and it is mostly marked by the school environment and society. Young people at the beginning of their adolescent development experience strong changes in social behavior, which are precisely related to the processes of (pre)adolescence. An integral part of socialization in (early) adolescence is the influence of peers that exists due to the presence of peers in the lives of adolescents. Accordingly, research is focused on examining aspects of adolescent development that play a significant role in their socialization. The main goal of this research is to determine the extent to which success in the processes of second separation-individuation is related to success in socialization in the period of early adolescence. Results indicate that problems in socialization, such as the occurrence of (typical) adolescent behaviors in early adolescence, should be understood as the failure of adolescents in the development of psychological autonomy in which family dynamics and parental capacities in mastering adolescent developmental processes has an important role.

KEYWORDS: adolescence, empathy, self, socialization.

INTRODUCTION

Socialization is one of the central processes during the (early) adolescent development of every person. The period of adolescence begins with biological pubertal changes, which, in addition to building sexuality, also encourages psychic autonomy (Blos, 1979; Špelić, 2020). During early adolescence, antisocial behaviors such as drug use, adolescent pregnancy, violence, etc. often develop (Wright et al., 2007). The process of socialization involves the parent, peers, the class environment and other people with whom the adolescent is in contact. Parental culture is transferred to the level of development of the child's culture (Christin, 2010; Willekens and Lievens, 2014). Parents participate in the socialization of the child intentionally unintentionally, transmitting their influences through their culture and preferences (Nagel, 2010). There are differences between families and other smaller groups: there is relative stability of position and role in the family, they depend on age and gender, and the family has a longer and stronger history than other groups. (Lacković-Grgin, 2005).

The most common approach to questioning popularity among students is most often measured by a sociometric technique, intended for the informal structure of the classroom. Student popularity is examined by accepting or rejecting an individual, acceptance is determined by sympathy, while non-acceptance is marked by dislike.

Students who fall into the category of rejected usually respond poorly to conflict situations, cope with stress unsuccessfully, get angry more often, achieve poorer school success, which makes it difficult for them to integrate into society (Kolak, 2010). Buljubasic Kuzmanović & Blažević (2015) classified, according to different authors, social skills into three basic groups. The first group is indicators of peer acceptance, according to which children who are popular and accepted by peers are considered socially skilled. The second group is behavioral definitions, according to which social skills are behaviors that in certain specific situations

increase the possibility of rewarding and reduce the possibility of punishing that person's social behaviors. The third group focuses on competencies, and here social skills are defined as social behaviors that contribute to social competence.

The process of secondary separation-individuation in adolescence is the child's cognitive sense of existence as a separate being (Blos, 1962), and its importance is for personality development and successful adaptation, with physical separation encouraging mental (Blos, 1975). Popadić (2016) points out that the role of the family is extremely important for establishing a mature ego that is not necessary for the adaptation process. During this process, adolescents acquire strong feelings of loneliness (Fujimori et al., 2017) which can be reduced by secure attachments and family cohesion.

METHODOLOGY

Research goal

The main goal of this research is to determine the extent to which success in the processes of second separation-individuation is related to success in socialization in the period of early adolescence (6th, 7th and 8th grade of primary school) in their classrooms.

Research participants

The research sample consists of 157 students from 12 grades of subject teaching from 6th to 8th grade of primary school (92 male and 65 female).

Instrument

A Moreno's sociogram (Andrilović, 1991) was used in the context of acceptance and rejection of other peers in the class; Separation-individuation test for adolescents (SITA) (Levine, Green & Millon, 1986) containing five variables: 1 - negation, 2 - separation anxiety, 3 - symbiosis, 4 - regression, 5 - optimal control; and the Self-concept test (Bezinović, 1988) which includes a scale of self-acceptance and feelings of social support.

The students answered the self-assessment questions according to the Likert scale. In the first group of questions, the questionnaire consists of 25 questions with answers (0 - does not apply to me at all, 1 - does not apply to me at all, 2 - does not apply to me, does not apply to me, 3 - does not apply to me, 4 - fully applies to me). The second group consists of 49 questions with answers (0 = not at all about me, 1 = less about me, 2 = here and there about me, 3 = mostly about me, 4 = completely relations to me). The third group of 55 questions with answers (0 - I do not agree at all, 1 - I agree to a lesser extent, 2 - I agree here and there, 3 - I mostly agree, 4 - I completely agree).

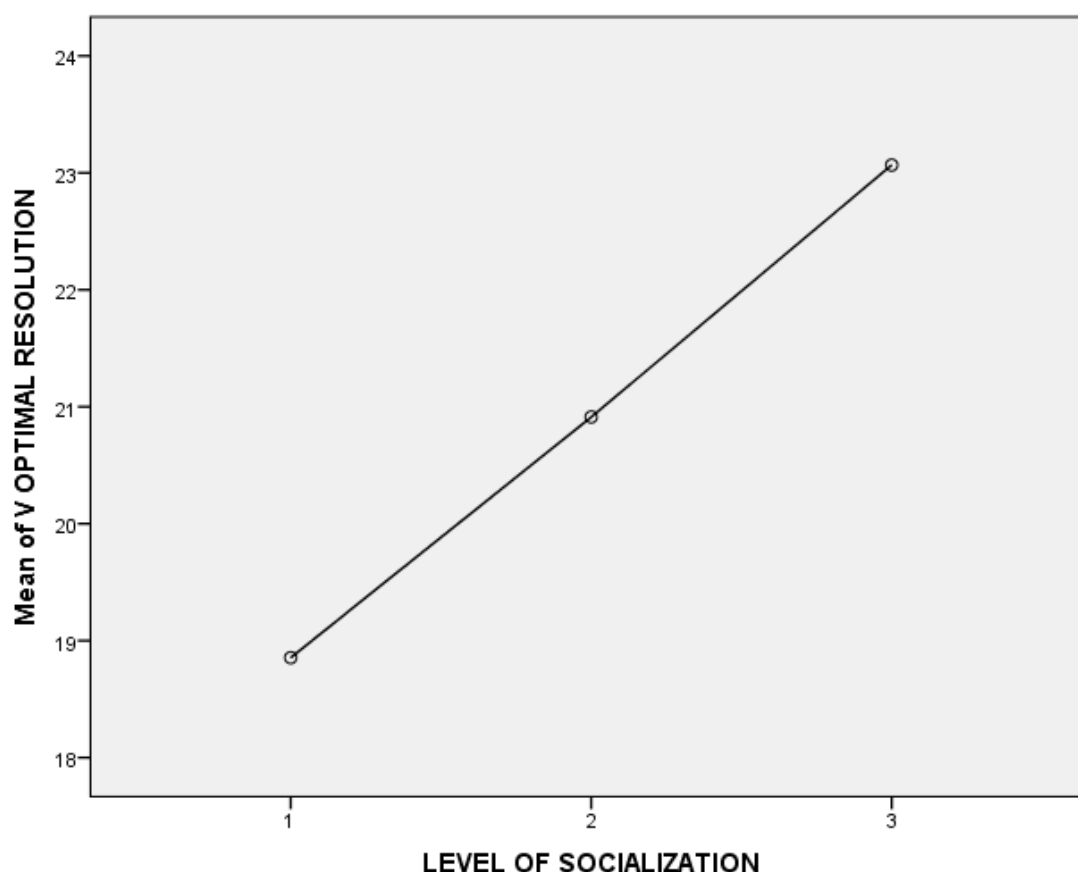
Procedure

The survey was conducted during January and February 2019 in a city primary school in Slavonski Brod. The research involved collecting data at one point in time. The questionnaire was conducted in class, lasting 45 minutes by written completion. The obtained data were processed with the help of the statistical data processing system SPSS for Windows.

RESULTS

Success in mastering the experience of psychological separation and sociometric status of students in the classroom

Regarding the variable of optimal mastery of the separation crisis, students were classified in three groups: G1 is low ($N = 52$), G2 is medium ($N = 55$), and G3 are high ($N = 50$) degree of success. The results show a clear trend (Graph 1.) of growth in the level of growth of optimal resolution and groups in socialization. All students from the first group, ie those with the lowest level of success are in the smallest group of the socialization spectrum.



Graph 1. *The correlation between the students' success in socialization and their success in optimal resolution*

The results indicate that with regard to the success in coping with the separation crisis, there is a significant difference in self-development, which is evident from the variables feeling of social support ($F = 17.097$; $p = 0.000$) and self-awareness ($F = 2.945$; $p = 0.056$). A large level of statistically significant difference is visible in these two groups, confirming the answer to the research question.

The results of the research confirm the initial assumptions about the connection between the process of socialization and the process of the second separation-individuation in the period of early adolescence. The results conclude that unsuccessful mastery of the separation crisis, such as the unsuccessful development of psychological autonomy as part of the second separation-individuation process, can lead to difficulties in the process of (successful) socialization of adolescents in the classroom.

CONCLUSION

Mastering the processes of second individuation-separation is a very difficult task for any preadolescent and can greatly influence his future development. This issue is also a major issue of socialization and it is important to determine which aspects influence the socialization of preadolescents, especially in their classroom environments. From a scientific point of view, it is important to establish that teachers and other professionals can influence the development of each child as positively as possible, which is easier to do when it is known what needs special attention. Part of the research presented in this paper indicates the variables of social support and self-awareness mostly related to the observed factors and special attention should be paid in this field. These results indicate the need to develop a model within the education system that can be positively influenced by both education and upbringing to better develop a sense of social support and self-awareness and raise levels, especially in the groups of students who are lowest-ranked in this area.

REFERENCES

- Andrilović, V. (1991). *Metode i tehnike istraživanja u psihologiji odgoja i obrazovanja* [Research methods and techniques in the psychology of education]. Zagreb: Školska knjiga.
- Blos, P. (1962). *On Adolescence A Psychoanalytic Interpretation*. The Free Press. New York.
- Blos, P. (1975). The second individuation process of adolescence. In: A. H. Esman (Ed.), *The psychotherapy of adolescence*. International Universities Press. New York. 156-176. DOI: [10.1080/00797308.1967.11822595](https://doi.org/10.1080/00797308.1967.11822595)
- Blos, P. (1979). *The adolescent passage*. International Universities Press. New York.
- Bezinović, P. (1988). *Perception of personal competence as a dimension of self-perception*. Doctoral thesis. Zagreb: University of Zagreb, Faculty of Philosophy, Department of Psychology.
- Buljubašić Kuzmanović, V., & Blažević, I. (2015). The school curriculum in the development of social skills of pupils. *Pedagogical Research*, 12(1-2), 71-84. URL: <https://hrcak.srce.hr/178850>
- Christin, A. (2010). *Gender and Highbrow Cultural Participation in the United States*. Princeton: Princeton University.
- Cohen, L., Manion, L., & Morrison, K. (2007). *Research methods in education*. Routledge.
- Fujimori, A. et al. (2017). Influences of Attachment Style, Family Functions and Gender Differences on Loneliness in Japanese University Students. *Psychology*, 8, 654-662. DOI: 10.4236/psych.2017.84042
- Kolak, A. (2010). *Sociometric status of students in the classroom and school hierarchy*. Faculty of Philosophy in Zagreb. Department of Pedagogy.
- Lacković-Grgin, K. (2005). *Psihologija adolescencije* [Psychology of adolescence]. Naklada Slap: Jastrebarsko.
- Levine, J. B., Green, C. & Millon, T. (1986). The Separation- Individuation Test of Adolescence. *Journal of Personality Assessment*, 50 (1), 123-137. DOI: 10.1207/s15327752jpa5001_14
- Nagel, I. (2010). Cultural participation between the ages of 14 and 24: Inter-generational transmission or cultural mobility?. *European Sociological Review*, 26(5), 541–556. DOI: 10.1093/esr/jcp037
- Popadić, B. (2016). *The relationship between early experience and psychological separation and individuation of adolescents*. Doctoral thesis. University of Novi Sad, Faculty of Philosophy.
- Špelić, A. (2020). *Empathy in the context of primary educational integration*. University of Juraj Dobrila in Pula.
- Willekens, M., & Lievens, J. (2014). Family (and) culture: The effect of cultural capital within the family on the cultural participation of adolescents. *Poetics*, 42(1), 98–113. DOI: 10.1016/j.poetic.2013.11.003
- Wright, R., John, L., Livingstone, A.-M., Shephard, N., & Duku, E. (2007). Effects of School-Based Interventions on Secondary School Students with High and Low Risk for Antisocial Behavior. *Canadian Journal of School Psychology*, 22(1), 32-49. DOI: 10.1177/2F0829573507301249

Alexandr TKACHEV, *Kokshetau State University*

Esengaly SMAGULOV, *Zhetysu State University*

Albina Temerbekova, *Gorno-Altaysk State University*

Methods of Application of Information and Communication Technologies in the Network of Intellectual Schools in Teaching Mathematics of Economic Models

ABSTRACT

The article is devoted to creating an interactive electronic textbook on economics using mathematical modeling. The author suggests introducing students to new mathematical concepts on the example of an economic model by using an electronic textbook on the principle of an organized press conference, where the student will play the role of a media representative, and the bot textbook is the organizer of the press conference. The lecture is based on the principle of decomposition of the material "question-answer". It is assumed that the student will ask questions depending on the assimilation of the lecture material. Moreover, our electronic textbook will know these questions in advance. This is the principle of conducting a press conference. The article also defines the concept of "Bot-textbook". This is a complex set of programs that uses its neural network based on game theory. The neurointerface builds its own scenario model of a cyclically repeating educational process. A scenario model depends on the effectiveness of educational material assimilation by students. The bot-textbook contains interactive knowledge testing blocks that are updated by a centralized source. The relevance of this resource is caused by the introduction of distance education during the quarantine of the coronavirus pandemic in the Republic of Kazakhstan. Moreover, the government of the country stated the fact that the Internet infrastructure is not able to cover all schoolchildren with online lessons. The proposed research in this area will also help to solve the problem of teaching children with disabilities.

KEYWORDS: interactive electronic textbook, bot textbook, distance learning, mathematics for economists, press conference, multi-order explanations

The coronavirus pandemic has launched a digital transformation of the educational process at all its levels, and it is happening much faster than it was planned for the last few years within the framework of state programs.

Within the framework of the State Program for the Development of Education and Science of the Republic of Kazakhstan for 2020-2025, one of the tasks is: "Reducing the gap in the quality of education between urban and rural schools, regions, educational institutions, students" (Decree of the Government, 2019). This aspect is quite difficult to solve because schools located in remote regions of our country have an underdeveloped Internet access infrastructure.

In his speech, the Minister of Education and Science Askhat Aimagambetov noted that the Internet in Kazakhstan is not adapted for conducting online lessons for schoolchildren (Tengrinews, 2020). Based on research: "We see that there are a lot of questions here. When we held trial lessons on April 1, more than one million of our children connected online only. In general, 2.5 million students took part in trial lessons via the Internet. We saw that there are both pros and very big cons. Different systems were used: in addition to using Zoom, "Kundelik", other messengers and resources were used", the minister said. – As a result, we saw that in general, our colleagues managed to adapt to distance learning in such a short time,

a lot of work was done. But at the same time, we saw a lot of inconvenient moments, including the technical plan. We saw that in general, connecting via online streaming, in fact, is simply unrealistic nationwide. And due to the existing problems, it is ineffective” (Tengrinews, 2020).

According to Tengrinews (2020), the platforms “Kundelik”, “Bilimland” and “Daryn-online” will be used for distance learning of schoolchildren, which do not require online streaming. Video tutorials will be conducted through the TV channels “Balapan” and “Elarna” as well as through “Kazakh Radio”. It is also provided for training via mail. Feedback will be provided via messengers and e-mail. “We should trust our children and fellow teachers more, and there should be less bureaucracy”, the minister said (Tengrinews, 2020).

As cited in Alizar (2020), the host of the telegram channel “ZaTelekom” and the director of the non-profit organization “Society for the Protection of the Internet” Mikhail Klimarev criticizes the conclusions of the Kazakh ministry. In opinion of Klimarev, the fundamental mistake is that the old model was used in distance learning, when “the teacher talks, and the cute kids sit and listen” (Klimarev, 2020). According to Klimarev (2020), this model stretches from the time of Socrates and was methodically approved by Janusz Korczak in the XIX century. Klimarev (2020) also notes: “Why drag the same model to the Internet – I don’t understand. There was no technical opportunity before to show good lessons of excellent teachers to millions of children. Therefore, we had to use hundreds of thousands of mediocre teachers – they just retell books written by others, more intelligent. Now you can take and watch the video on YouTube of the most beautiful teacher and understand much more. In the XXI century, such training opportunities as modeling, collective creativity, project training and a million more excellent methods, including “high-speed googling”, have appeared. No, we take and drag to the Internet the babble of tongue-tied aunts and a survey on the list (Petrov! To the board!). In the Zoom according to the schedule. Then we are surprised that “the Internet channels could not stand it”, Mikhail Klimarev believes (Klimarev, 2020; Alizar, 2020).

Perhaps the current emergency will push educational institutions to introduce more innovative methods of distance learning, moving away from the outdated model with lessons/lectures, cramming and homework.

According to our opinion, our interactive electronic textbook will be able to solve this problem, as well as our resource will help to reach children with disabilities who do not attend school. Updating the education system today is directly related to using such a powerful tool as a computer. It can play the role of an effective means of educational and cognitive activity, be a tool for processing and analyzing pedagogical information, manage and organize the educational process.

The following applications of the computer in the learning process are possible:

- a means of illustrating the text of the textbook;
- a means of simulating the operation of various devices and objects;
- a tool for modeling various phenomena and processes;
- a video laboratory;
- a simulator that allows students to consolidate their knowledge, skills and abilities;
- computing device;
- local information and reference system, etc. The effectiveness of the use of pedagogical software tools in teaching depends on their quality. Pedagogical software tools should serve the development of the thought processes underlying the formation of certain skills, that is, the emphasis in them should be placed on both the process and the result. In this case, students will act as active participants in the educational process,

constructing their own mental schemes, and not just as passive recipients of information.

According to Dalinger and Lapchik (2011), there is a variety of approaches to the classification of pedagogical software tools. We note one of them, which seems to us the most complete:

- 1) Control programs that perform some traditional functions of a teacher, in particular class management.
- 2) Training programs that guide learning based on the knowledge available to students and individual preferences; as a rule, they involve the assimilation of new information.
- 3) Diagnostic programs designed for testing, evaluating or verifying knowledge, abilities and skills.
- 4) Training programs designed to repeat or consolidate the completed educational material and do not contain new educational material.

The idea of the proposed version of the electronic textbook for students on the subject of “Economics” in grades 11-12 is as follows. According to Berlova et al. (2003), the training takes place according to the principle and rules of holding a press conference. A press conference is an event held for the mass media in order to report a socially significant news or event in connection with which they want to comment, includes a dialogue between the organizers and the media.

The screen of the electronic textbook is divided into two parts: the right side is the teacher (the organizer of the press conference), the left side is the student (the media representative). The role of the teacher in this case is performed by our interactive textbook. One of the rules of organizing a press conference says: “The texts of speeches (pre-printed) are placed either on a special table or on an information stand. They are also included in the information package of documents (press kit). It is quite acceptable to read the text on a piece of paper. Having a printed text in front of your eyes is not harmful in any case. But a solid reading will completely remove the effect of naturalness, which is desirable at a press conference” (Berlova et al., 2003).

The lecture is based on the principle of decomposition of the material “question-answer”. It is assumed that the student will ask questions depending on the assimilation of the lecture material. And our electronic textbook will know in advance what these questions are – according to the principle of a press conference. The topic of the lesson being studied is the agenda of the press conference. The more the student asks questions to the electronic textbook, the more and more effectively he will learn the information.

Satisfied with the answers of the textbook, the student proceeds to study the following topics and studies the material on the same principle. At the end of each section or topic, the textbook offers to evaluate the student's knowledge

The cycle of events around the press conference is completed by press clipping control and analysis of materials published in the media, which are extremely necessary both to determine the degree of effectiveness of the campaign and to form plans for the future. By analogy with the rules for organizing a press conference, an interactive electronic textbook will monitor the student's acquired knowledge.

The control questions for the student will be compiled in this way, examples from a specific economic situation where the student will not be able to find the answer on the Internet using search engines, but independently fills in the answer tab, where the student's anti-plagiarism system checks the percentage of uniqueness of the text with the lecture material. The percentage of uniqueness and the relationship of the text with the lecture material, i.e. the use of terms and concepts of this lecture in its written response, etc., is evaluated by the system of

our textbook without a teacher. It is also possible when the student wishes to send the completed task to the teacher. This system also facilitates the process of evaluating a student by a teacher.

In the conditions of information technologies of training, multi-order explanations are effective. The first explanation of the educational material should be conducted by the teacher. However, as noted above, in the conditions of distance learning, in some cases this is not possible. At the same time, the explanation should be such that it is accessible to all students. This is achieved by reducing the volume of the reported material, by deliberately simplifying the presentation. The level of the first explanation should be such that it gives the minimum of mandatory learning outcomes that allows you to understand the material of the following topics of the course; the first level of explanation should give, albeit simplified, but a complete and correct idea of the object being studied, the phenomenon. This explanation is based on the most accessible material.

Subsequent explanations can be organized by means of a computer and represent a higher level, taking into account the abilities and inclinations of the most prepared students. Repeated “computer” explanations should contain details and subtleties of the educational material, they should differ in the rigor and depth of the presentation of the material. These explanations are aimed at the development of those students who show interest in the subject. Our interactive electronic textbook will carry exactly this function.

Mendigalieva et al. (2020) shows that in the school subject “Economics”, the control and thematic plan recommended by JSC “Nazarbayev Intellectual Schools” will be used, where the subject is supposed to include the solution of simple models of production and economic problems. The student will receive mathematical skills from completing the following periods:

- Stage 1. Read the terms and conditions in detail.
- Stage 2. Creating a sample on paper.
- Stage 3. Drawing up a mathematical model.
- Stage 4. The choice of the solution method.
- Stage 5. Selection of a program and recording for solving a problem on electronic computers (computers).
- Stage 6. Solving a problem on a computer.
- Stage 7. Analysis of the results obtained (Mendigalieva, 2020).

According to Smagulov and Tkachev (2020), author's method of teaching mathematics on the basis of an elective course based on mathematical modeling of real economic and production processes described by linear models is an effective means and mechanism for the formation of cognitive independence of students of specialized classes of economic orientation .

Each section of the electronic textbook will contain definitions of basic mathematical and economic concepts and other necessary theoretical information will be provided. The main and most important questions of mathematics and economics will be described in more detail and systematically. The interactive electronic textbook will contain general methods for solving problems of economic and mathematical modeling and methods for finding the optimal solution. Graphical simulation method, simplex method, double calculations, transport reports, etc. various examples will be given.

In the organization of the educational process, a priority role is given to teaching as the main activity of students. The teaching involves the use of interactive teaching methods, which are based on the organization of the development of experience by the students themselves by showing initiative to search, to be active in discussing issues, in arguing a point of view, to make a constructive decision.

The student's activity, both in cognitive and social terms, is manifested not in isolation, but in interaction with other students and with the teacher. A variety of interactive methods, both individually and in various combinations, create prerequisites for learning in cooperation of all its participants, without allowing authoritarianism in relationships.

Interactive teaching methods, as special forms of organizing cognitive activity of students, contribute to the assimilation of educational information by them in the process of creative search, ensure the success of all participants in achieving the final results of joint activities. As a result, the cognitive process turns into a higher form of cooperation and cooperation, since everyone contributes to achieving the final result, there is an active exchange of knowledge, ideas, and methods of activity.

The use of interactive methods makes it possible to turn learning into a model of social communication of students in real creative activities instead of simple communication during reproductive educational activities. Interactive methods, conventionally grouped into training, dialogue and reflexive, can be creatively used by the teacher, taking into account the age characteristics of students, the didactic possibilities of the content of a particular educational material.

Ensuring consistency in the development of project, research activities of students is one of the main principles of the organization of the educational process in Intellectual schools. Purposefully developed students' abilities for design and scientific research activate their independence, reveal their intellectual potential, motivate students to set their own life goals and build a competent way to achieve these goals that do not contradict moral, moral norms. Through project and research activities, students gain new knowledge not only within the framework of mandatory academic subjects, but also when organizing their activities outside of lessons. This type of activity of students develops their critical thinking, the ability to navigate in the information space. During the implementation of projects and research, students independently construct their knowledge, concentrate the process of scientific knowledge on the need to assimilate and understand scientific knowledge, key scientific concepts, mobilize all their knowledge and skills to solve real scientific problems.

It is assumed that the bot textbook will meet the requirements for training systems, namely, psychological and pedagogical, didactic and methodological requirements:

I. When designing educational and methodological complexes, it is necessary to take into account psychological requirements. They consist in taking into account the individual psychological characteristics of the trainees, as well as ergonomic norms.

The development of various intellectual abilities of students, as it was shown by Sokolova (2011), is facilitated by the use of basic psychological concepts of learning in the educational process, which include: the development of mental cognitive processes – perception, attention, memory, thinking, imagination, speech, including in the process of communication; the development of figurative and spatial thinking; the development of inductive and deductive thinking; the formation of systemic knowledge. In the learning process, it is necessary to take into account individual psychological characteristics (self-esteem, temperament, level of claims and development of intellectual abilities, cognitive and creative styles, etc.), which contributes to increasing the effectiveness and activation of cognitive independence of students and, consequently, the development of their intellectual abilities and psyche as a whole.

In the work of Erofeeva and Klowait (2021), the information on the basis of which a holistic image is formed comes to us through various channels: auditory (perception of auditory images), visual (perception of visual images), kinesthetic (perception of sensory images). Since

the information is visual and is provided on a computer, we will indicate the following requirements for providing information on it:

1. It is necessary to minimize the size of the text information;
2. The age characteristics of the trainees should be taken into account when choosing ways to display information on the monitor screen;
3. Since no more than 5-7 objects correspond to the normal volume of information perception on the screen, the number of information objects on the screen page should be within the same limits;
4. The most important information for normal perception on the screen should be presented in the center of the screen and highlighted using different colors;
5. On the screen, information objects are presented in a strict logical sequence with a clear allocation of knowledge elements;
6. Information material on the topic of the lesson is presented dynamically and systematically on the screen.

Taking into account the requirements for the presentation of information on the screen page provides a partial implementation of pedagogical conditions, since it increases the motivation for learning, maintaining interest until the end of the lesson and positively affects the strengthening of the level of knowledge.

II. DIDACTIC REQUIREMENTS

The didactic requirements correspond to the specific laws of learning and, accordingly, to the didactic principles of learning. General questions of higher school didactics are considered in the works (NIS, 2018).

In the dissertation research of Sklyarova (2003), didactic requirements for pedagogical software and methodological tools are indicated: scientific content, accessibility of information, ensuring clarity, ensuring systematicity and consistency, ensuring the consciousness of learning, independence and activation of activity, ensuring the strength of assimilation of learning results, developing intellectual potential, providing suggestive (from the English word suggest – suggest, advise) feedback, ensuring the individuality of learning, adaptability.

Didactic principles, such as the principle of scientific character, visibility, accessibility, activity and consciousness of learning, etc. are inherent in both traditional learning technologies and technologies using electronic educational resources. The entire list of requirements can be implemented only with the help of electronic educational resources, namely training systems.

The following were chosen as the main didactic principles for creating training systems: scientific content, visual learning, providing computer visualization of educational information, interactive dialogue (interactivity), individuality of learning, adaptability of learning.

III. METHODOLOGICAL REQUIREMENTS

The theory and methodology of teaching natural science disciplines are considered in the works of Vazheevskaya (2003), Erofeeva (2007), Zelichenko and Larionov (2009), Lisichko (2009), Puryшева (1995), Rumbeshta (2009), Usova (2002).

The main methodological requirements for educational electronic publications are reduced to the following:

- an educational electronic publication must meet the requirement of completeness of the content, which allows to fully realize the methodological goals of training;
- an educational electronic publication should be developed on the basis of a pedagogical scenario – a purposeful, personality-oriented sequence of pedagogical methods and technologies that ensure the achievement of learning goals;
- pedagogical methods and technologies of the pedagogical scenario should be used taking into account the specifics of each specific science and the corresponding academic discipline (Nazarov, 2016).

The content of the courses of natural science disciplines differs significantly in the depth of study of the educational material, the theoretical level of its presentation and the applied mathematical apparatus.

Educational and methodological materials should contribute to the achievement of the following goals and objectives:

- mastering the core of the content-the basics of modern scientific theories (scientific facts, concepts and quantities, theoretical models, laws, principles and equations, conclusions);
- the use of knowledge to solve problems, independently acquire knowledge in the field of natural science disciplines and assess the reliability of information, the use of electronic educational resources for the purpose of searching, processing and presenting educational and popular scientific information;
- development and maintenance of cognitive interest, intellectual and creative abilities in the process of solving problems and independently acquiring, replenishing, applying new knowledge, performing experimental research, preparing reports, abstracts and other creative works.

There are certain requirements for the software of the training system. In particular, the software should provide:

1. A comfortable learning environment;
2. Availability of information material from any position;
3. Dynamic user feedback with the training system;
4. The possibility of returning to incorrectly solved problems and incorrect answers;
5. Availability of reference material on physics and mathematics, control procedures, planning of educational activities;

Let's define the concept of a "bot textbook" - a complex set of programs that uses its own neural network based on game theory, where the neural interface builds its own scenario model of the educational process depending on the effectiveness of mastering the educational material by students, and also contains interactive blocks of knowledge verification, updated from a centralized source, and so on.

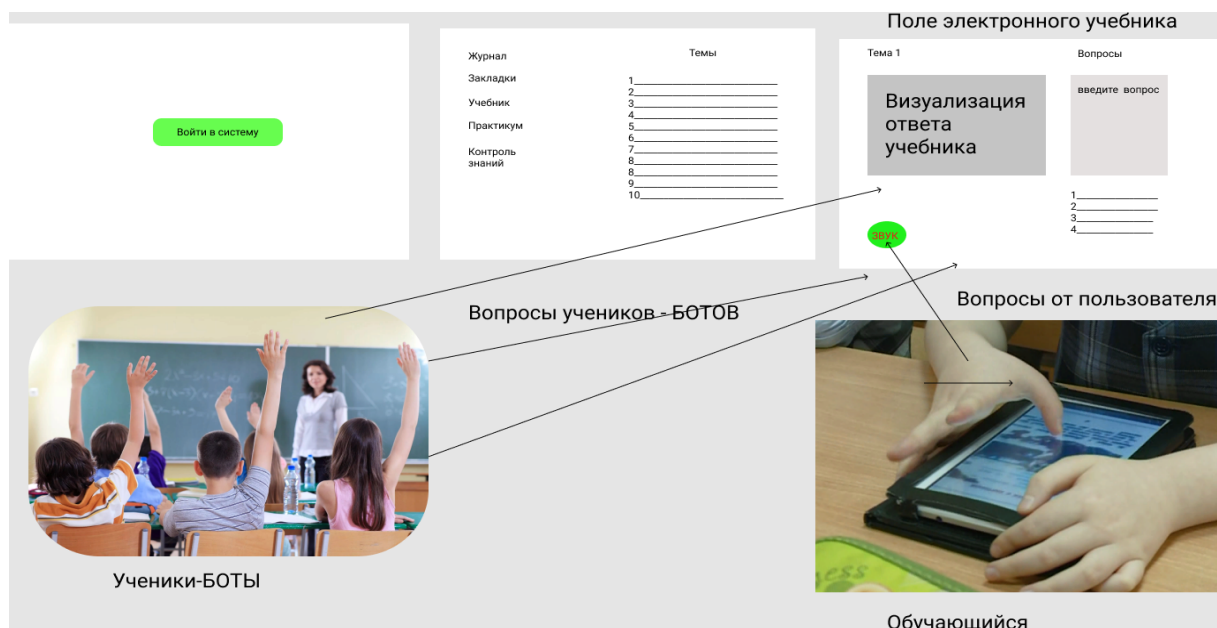


Figure 1 - The technology of interaction of the bot tutorial with the user

The presence of virtual participants: bot students also participate in the educational process and react to the behavior and development of an electronic textbook by the user. The initial scenario of the lecture is laid down, where the user (student) asks questions to an electronic textbook, the more questions he asks, the more the topic of the lesson is revealed. If the user does not ask questions, then at some point the bot students start asking questions. The role of the student-bot is of a scenario type and reacts to the actions of the student. For example, the material is perceived easily by the student, i.e. he answers and asks questions, gets high scores and students-bots in this case behave as motivators, supporting in some directions, and if the student is given the material difficult, then the bots will change their behavior.

Control system: if the student answered poorly on the material passed, the textbook shows these weak points where the student could not answer correctly and the material is repeated not the same, but in a complicated form. Thus, the textbook can change the algorithm of actions when determining the level of assimilation of the material by the student, and also bot students can change their behavior in relation to the educational process, helping the student to master the material more efficiently.

Visualization of tasks on the mathematics of economic models (demand, supply, tasks, economic situations, solutions using mathematics).

Internet connection: how important is it to have one mode of operation? If there is no Internet, then work is carried out only with the content of the textbook, if there is a connection to the Internet, then feedback is established with the central server, which will allow us to update and receive feedback on improving the content of the electronic textbook. There is an opportunity, thanks to game theory, to create bots that will be able to self-learn and create their own scenario model. For example, the bot recommends to complicate the tasks given to the student, because this user of the tutorial is advanced in this topic.

Feedback is carried out using a bot for correcting errors, unplaced material, etc. The student turns to the bot and informs: the bot can accept this information, according to the laid-down scenario, give a preliminary answer that your application will be considered, we will send you the result and when connecting to the Internet, give information to the team. Accordingly, the

team performs an update and the bot informs the student about the correction or correction of the content.

We need a small neural network, we need an image of a bot that acts in feedback. Pay attention to the speech recognition tool (not all tablets have it installed). We need an environment where we can enter formulas, graph.

Depending on the variable in the economic problem, the computer builds and shows the graph to the student. Also, the textbook should have the ability to recognize the correctness of the graph drawn by the student.

IT technologies should not limit the educational process.

The tablet replaces the teacher, then how the teacher works is a complex system, i.e. the presence of motivator, supporting elements and elements of development, if this topic is difficult to give. This system of achievements will become the basis of the work of the neurointerface in order to configure bots and give them a game situation how to act. That is, to show the student not only his weak points when mastering the material, but also vice versa to show where the student succeeded, that he is still given material. The teacher conducts educational work for the computer using rather complex methods, since the teacher relies on the paradigm of knowledge transfer. The computer in this case is a little "stupid". He acts according to a pre-laid program, and even if this program involves some kind of self-development. Thus, the opportunity to get such skills as the human brain, especially on a tablet, will be quite difficult. If we can move the teacher's methodological work on motivation a little further, precisely keeping the idea that the tablet can replace the teacher, then we will be able to give mathematical characteristics and additional criteria for this neurointerface to push the user to turn the next page. Otherwise, he can close the tablet and put it down and say that it is very difficult. Plus is stronger than minus, and if the student has mistakes, but they are not significant, then the bot-textbook will be able to give some small task to the student and fix the missed material.

REFERENCES

- Decree of the Government of the Republic of Kazakhstan dated December 27, 2019 No.988 "On approval of the State program for the development of education and science of the Republic of Kazakhstan for 2020-2025" (2019). Retrieved from <http://adilet.zan.kz/rus/docs/P1900000988>
- Tengrinews. (2020, April 3). *MES canceled online lessons for schoolchildren: "Our Internet is not suitable"*. Tengrinews. <https://tengrinews.kz/news/mon-cancel-onlayn-uroki-shkolnikov-nash-internet-397322/>
- Alizar, A. (2020, April 4). *Kazakhstan has not mastered distance learning*. HABR. <https://habr.com/ru/news/t/495632/>
- Klimarev, M. (2020, April 3). *Meanwhile Kazakhstan has not mastered distance learning*. *ZaTelekom*. <https://t.me/zatelecom/14165>
- Dalinger, V. A., Lapchik M.P. (2011). Selected issues of informatization of school mathematical education [Monograph]. Moscow, 150 p.
- Berlova O. A., Zakharov V. P., Kolesnikova V. B., Kochineva A. L. (2003). Game of the information field. *Journalism and PR for the "greens"*. Moscow: MSoES Publishing House, 207 p.
- Mendigalieva G. H., Smagulov E. Zh., Bostanov B. G., Damekova S. K., Zhiembayev Zh. T., Smagulov B. E. (2020). *Fundamentals of modeling of production and economic problems*: textbook. Taldykorgan, Publishing Center of Zhetysay State University named after I. Zhansugurov, 227 p.
- Smagulov E. Zh., Tkachev A.V. (2020). Constructing a hypothesis for studying the problem of teaching mathematics to economic models. *International Scientific Journal Science and Life of Kazakhstan. Special issue of M. Auezov South Kazakhstan State University*, 7(1), Shymkent, 141-145.
- Sokolova, I.Yu. (2011). *Pedagogical psychology*: Textbook. Tomsk: Publishing House of Tomsk Polytechnic University, 328 p.
- Erofeeva, M., & Klowait, N. O. (2021, May). The Impact of Virtual Reality, Augmented Reality, and Interactive Whiteboards on the Attention Management in Secondary School STEM Teaching. In 2021 7th International Conference of the Immersive Learning Research Network (iLRN) (pp. 1-5). IEEE, doi: 10.23919/iLRN52045.2021.9459318
- NIS. (2018). The development strategy of the autonomous educational organization "Nazarbayev Intellectual Schools" until 2030 was approved by the decision of the Supreme Board of Trustees of December 01, 2018. Retrieved 12 April 2021, from <https://www.nis.edu.kz/site/nis/repository>
- ROCIT. (2017). *Index tsifrovoy gramotnosti [Digital Literacy Index]*. Retrieved from <https://rocit.ru/uploads/769c4df4bc6f0bd6ab0f5e57a056e769b8be6bcf.pdf>
- Sklyarova, E. A. (2003). *Creation and practice of using an interactive teaching system in physics* (Doctoral dissertation, Tomsk State Pedagogical University).

- Vazheevskaya, N. E. (2003). Gnoseological foundations of science in school physical education. dis dr. ped. Sciences.-M.: RSL.
- Erofeeva, G. V. (2007). Teaching physics in a technical university based on the use of information technology (Doctoral dissertation, dissertation for the degree of Doctor of Pedagogical Sciences / GV Erofeeva).
- Zelichenko, V. M., & Larionov, V. V. (2009). Educational environment of school and university: the role of physics in the social sphere and ecology. *Bulletin of the Tomsk State Pedagogical University*, (6), 102-106.
- Lisichko, E. V. (2009). Formation of the readiness of students of a technical university for professional activities in the process of studying physics (Doctoral dissertation, abstract of a dissertation for the degree of candidate of pedagogical sciences / E. V. Lisichko).
- Purysheva, N. S. (1995). Methodical foundations of differentiated teaching of physics in secondary school.
- Rumbeshta, E. A. (2009). *Theory and methods of teaching physics*. Tomsk: TSPU, 116 p.
- Usova, A.V. (2002). *Theory and methods of teaching physics*. General questions: A course of lectures. St. Petersburg: Meduza Publishing House, 157 p.
- Nazarov, N. I. (2016). Educational Electronic Publications as a Means of Increasing the Efficiency of Learning. *Scientist of the 21st century*, 21.

Moldir YELIBAY, *Eötvös Loránd University*
Understanding the Lack of Female Leadership in Higher Education of
Kazakhstan

ABSTRACT

This is an ongoing doctoral thesis on female leadership in Kazakhstan. Kazakhstani statistics show that in total, there is almost an equal number of men and women with advanced educational degrees and 70% of all faculty members are women (Lipovka, 2018). Kazakhstani female faculty members are as educated as men, however, the ratio of people at the academic management level (rectors, vice-rectors, deans) are not equal. Several studies have addressed this phenomenon in the sphere of higher education sector, however little empirical research has actually been conducted on Kazakhstan. Therefore, this research aims to understand the phenomenon of female underrepresentation in higher leadership of Kazakhstan, from the perspective of women at the different stage of their academic career (PhD students, early, mid, senior-level professional).

KEYWORDS: Central Asia, Kazakhstan, female leadership, higher education

CONTEXTUAL INFORMATION

Kazakhstan has a unique history, which perplexes in interesting and conflicting societal expectations on gender roles. These norms echo in families, education and careers of women (Kuzhabekova & Almukhambetova, 2019). Females are expected to be highly educated and well mannered. Due to societal expectations on gender roles Kazakhstani females might be stereotyped from their childhood about their abilities to succeed in different fields. Particularly, there are existing conventions about women in STEM fields and superior management careers. Females are mostly discouraged by their family members to pursue technical or higher ranked management positions; and are advised to choose “more feminine” professions (Almukhambetova & Kuzhabekova, 2017). The reasoning is that a woman should not be more ambitious and assertive than men, therefore her current or future husband will be more comfortable with her career choice.

As a result, education, due to its nurturing nature, is considered a feminine profession in Kazakhstan, where females dominate (Dubok & Turakhanova, 2018). For instance, in the higher education sector of the country, women represent 64% of all faculty members. The latest available information from the Ministry of National Economy of the Republic of Kazakhstan Statistics Committee from 2019 show that 24% share of all academic top management positions in higher education belong to women, while men take 76%. The numbers from previous years are also similar (“The ratio of women and men in the higher education system at the executive level in Kazakhstan”, 2018).

THE RESEARCH PROBLEM

Research has indicated that diversity in top management is integral for organisational growth (Roberts, 2007). However, there is a difference between how men and women oversee an organization. Females are characterised with transformational actions - offering support, encouragement, empowerment and engagement to the team (Eagly & Carli, 2003; Fine, 2009). Males are more transactional - applying a top-bottom supervision approach which confirms the existing structure, where teamwork is focused on achieving the results, and the reward - punishment system is dependent on productivity (Eagly & Carli, 2003). A more diverse management team leads to the blend of approaches, perspectives, boosts creativity and broader range of thinking. Nevertheless, gender differences in the socialisation, worldview and life experiences result in women adapting their behaviours so that men do not feel intimidated by their management styles (Ragins, Townsend, & Mattis, 1995, Jung, 2002). Therefore, the perception of gender differences results as a lack of women top managers, and lacking role models for those who aspire to become one.

Several studies have addressed this phenomenon in the sphere of the higher education sector, which is relevant for this study. Kazakhstani researchers explain the lack of females at the top management positions as the perplexing complexities of traditional, Soviet, and Westernized neo-liberal expectations. On the one hand, traditional beliefs expect women to be caring for a family and nurturing children. Men are superior, financially support the household, and hence their decision is central to the family. On the other hand, the Soviet legacy has shaped the idea that women can work full time, delegate child-rearing responsibilities to day-care. However, a woman should earn less than her husband to avoid jeopardizing a spouse's superiority. Neoliberal Western ideologies challenge the above mentioned "norms" by positioning women's career as a primary goal, despite the family responsibilities and husbands' expectations. Three confronting values existing in Kazakhstani society affects female career advancement to the top management positions. Women have to juggle different roles: being good mothers and wives, but also being productive and economically independent as professionals and self-sufficient individuals (Kuzhabekova & Almukhambetova, 2017). On a broader scale, the literature review on this subject has distinguished several themes that are relevant to females progressing towards the top managerial careers. Those themes can be classified as individual micro-level, personal meso-level, institutional meso-level, larger macro-level factors, such as culture, society and economy, that affect women's decision to pursue top managerial careers in higher education.

To the author's knowledge, there are no existing studies that would explain the phenomenon of female underrepresentation in the higher education sector of Kazakhstan as the combination of the unique contextual information provided by local scholars and its interrelations with Western studies. Despite an increased interest in gender studies in Kazakhstan, it is surprising that so little empirical research has actually been conducted on the topic, especially from the perspectives of local scholars. Empirical research in educational settings is especially scarce: very few studies have focused on exploring female leadership in the higher education sector of Kazakhstan (Kuzhabekova & Almukhambetova, 2017; Kuzhabekova, & Almukhambetova, 2019).

RESEARCH QUESTIONS

The main research question of this study is “What factors favorably and destructively affect females’ decision to pursue top managerial careers in higher education?” with the sub-questions:

- What factors favorably and destructively affect females’ decision to pursue top managerial careers in higher education at the individual micro-level?
- What factors favorably and destructively affect females’ decision to pursue top managerial careers in higher education at the personal meso-level?
- What factors favorably and destructively affect females’ decision to pursue top managerial careers in higher education at the institutional meso-level?
- What factors favorably and destructively affect females’ decision to pursue top managerial careers in higher education at the larger macro-level?

THEORETICAL, CONCEPTUAL, ANALYTICAL FRAMEWORK

Numerous researches have shown expansion of academic parameters, which led to no more clear-cut boundaries between academic identities and terms (Whitchurch, 2006; Whitchurch, 2008; Whitchurch & Gordon, 2009). For the clear understanding of concepts, the author acknowledges several distinctions in university careers that are applicable to the current study. There are four main dimensions that are important to define: academic and non-academic, managerial and non-managerial careers.

Academic careers in universities are related to teaching, research and service, which may include some administrative or supervisory responsibilities. Non-academic careers in universities may consist of counselling and consultative positions, and also program or project management. The other important distinction in university jobs are managerial and non-managerial positions. Leadership, planning, policymaking, supervision and other administrative responsibilities are referred to as managerial positions. Other careers that do not require overseeing and decision making, can be named as non-managerial careers, since they require only carrying out the professional functions for the organization (Whitchurch, 2008).

With the above-mentioned definitions in mind, careers in university are classified as academic staff (academic, non-managerial), academic managers (academic, managerial), professional staff (non-academic, non-managerial) and professional managers (non-academic, managerial). The author realizes that some positions may overlap and may not have clearly bounded responsibilities in higher education settings. Nevertheless, distinguishing university jobs as academic/non-academic and managerial/non-managerial helps readers to understand the logic of the following study and the broad nature of the higher education sector.

Academic staff are employees who teach, conduct research and provide institutional service. These include faculty members solely. Academic managers are personnel with administrative responsibilities, such as deans, rectors, vice-deans i.e. those who are at the executive positions in higher education. Although in some settings academic staff and academic managerial careers may be intertwined.

Professional staff also have academic credentials, such as Master's or PhD degrees, and teaching or research experience. These individuals hold specialist roles, but without an academic contract. Professional staff career duties may include establishing university partnerships, undertaking quasi-academic functions such as conducting skill sessions for students, outreach events or recruitment visits. Professional managers, located higher on the career ladder, have more decision-making power and overseeing functions. For instance, they may be leading faculties, programs and departments, or managing functional areas such as student services, finance and human resources offices or quality audit and research management. It is vital to notice that currently in the higher education sector professional staff and managers hold high authority and decision-making power, therefore academic staff and managers often depend on their decisions (Whitchurch, 2006; Whitchurch, 2008; Whitchurch & Gordon, 2009).

Acknowledging different career options available in the universities, the literature review will embrace all domains relevant to higher education professionals - academic staff, academic managers, professional staff and professional managers.

Since research questions of this study focus on factors that influence the decisions to pursue top managerial careers in higher education, the factors are classified as following. Individual micro-level factors include aspects relevant to the self, such as self-esteem, self-efficacy, self-perception and individual skills. Personal meso-level factors discuss how family, friends and peers may influence the individuals' decision to pursue leadership careers in universities. Institutional meso-level factors acknowledge the broader level of organizational culture, institutional policies, relationships with colleagues and supervisors. Larger macro-level factors relate to conventionalities and cultural aspects that influence choices for academic and professional leadership careers in higher education.

The research questions of this study focus on factors that influence Kazakhstani females to pursue top managerial careers in higher education, i.e. as academic or professional managers in universities. Nevertheless, the author realizes the complexity of the higher education system, therefore, the literature review will present existing research on individual micro-level, personal meso-level, institutional meso-level and larger macro-level factors that influence decision to pursue academic and professional careers in universities.

METHODOLOGY

The author has decided to use mixed methods because combining qualitative and quantitative data collection and analysis in research balances the weaknesses of each of those forms of research methods. The qualitative data will be gained from open-ended questions through interviews, and the quantitative data will be collected from closed-ended questions of an online survey. Seeking convergence across both methods will prevent potential bias and weaknesses in the research data analysis (Cresswell, 2014). The researcher expects that qualitative and quantitative parts of the research methods will produce similar results, while the qualitative part will be more in-depth explanations of the quantitative part.

The rationale for selecting quantitative survey research as a quantitative data collection method are as follows. First, the author aims to generalise from a sample to a population so that conclusions about some characteristics of the sample could be made. The online survey is a

preferred data collection procedure because of the economy of the design and prompt results. The survey will be collected one time, hence it is cross-sectional (Cresswell, 2014). Survey will be launched and distributed online, because it is the safest and fastest way to collect data from a different country, especially during the pandemic.

The population for this research is Kazakhstani individuals in academia - current PhD students, early, mid-level and senior career professionals. The sample for the current study will include Kazakhstani females in academia, at the different stages of their careers - PhD students, early, mid-level and senior professionals. The reason to include Ph.D students is that academic socialization happens during the graduate studies and influences further career decisions (Weidman & Stein, 2003). Women in academia at the different stages of their career also are the part of the sample, since aspirations and opportunities for managerial positions, in most of the cases, emerge at a later phase of one's professional career. Furthermore, having a husband, children and the problem of establishing a work-life balance often come later, not in the period of doctoral studies. Plus, doctoral students may not have a general idea about gendered promotion practices.

Therefore, at the quantitative phase, an online anonymous survey will be distributed among Kazakhstani females in academia, who align with research participants' criterias and would be available for the researcher. Survey participants have to be a female Kazakhstani citizen with an active status of a doctoral student or employed at any Kazakhstani or foreign university. Using Fowler's (2009) formula, the author arrived at the sample size 500, approximately 123 females from each group - PhD students, early, mid-level or senior professionals in higher education. An instrument to collect the data will be the survey questionnaire that the author specifically will design for this research.

The interview design is appropriate for this study because the aim is to understand factors that affect females' decision to pursue top management careers in higher education. According to Cresswell (2014), phenomenology usually involves examining three to ten individuals. Another approach is also possible, which is related to the idea of saturation. Saturation comes from the grounded theory and means that interviews should stop when no new themes emerge in the data collection (Cresswell, 2014). According to Guest, Bunce & Johnson (2006), a saturation that is sufficient to achieve the main goal of the qualitative study occurs around number ten. Therefore, the author anticipated conducting 12 interviews with females at the different stages of their academic careers - PhD students, early, mid-level and senior professionals; three individuals from each group.

Data collection procedures for this study include collecting data through interviews and establishing the protocol to collect the information. The qualitative data collection for this study will consist of semi-structured interviews with Kazakhstani female PhDs students with an active status at any Kazakhstani or foreign university. The researcher will use snowball sampling in order to select participants for the interviews, because the researcher's prior study has shown that participants are hesitant to participate in research studies that involve personal and professional discussions (Yelibay, 2021). Hence, the sampling strategy relied on purposeful snowball sampling and will be implemented as "... a researcher asks participants to recommend other individuals to be sampled" (Cresswell, 2014, p.231). The researcher will have at least three starting points for the snowball sampling in order to avoid the closeness of the sample. The main dilemmas the author is facing during the research are: (1) how to ensure the validity and reliability of data while collecting both quantitative and qualitative research; (2) how to analyse mixed methods research considering

the time limits of the PhD studies; (3) what are the potential drawbacks of surveying only PhD students, but interviewing women at the different stage of their careers?

REFERENCES

- Creswell, J. (2014). Educational research: planning, conducting and evaluating quantitative and qualitative research. Pearson: Edinburg gate.
- Dubok, H., & Turakhanova, D. (2018). "Gender Study for Central Asia: Kazakhstan Final Report", available at https://eeas.europa.eu/sites/eeas/files/kazakhstan_final_report_16.11.2017_approved.pdf (accessed 12 January 2020).
- Eagly, A. H., & Carli, L. L. (2003). The female leadership advantage: An evaluation of the evidence. *The Leadership Quarterly*, 14, 807-834.
- Eagly, A. H., & Wood, W. (2016). Social Role Theory of Sex Differences. *The Wiley Blackwell Encyclopedia of Gender and Sexuality Studies*, 1–3. doi:10.1002/9781118663219.wbegss183
- Fine, M. G. (2009). Women leaders' discursive constructions of leadership. *Women's Studies in Communication*, 180-202.
- Fowler, F. J. (2009). Survey research methods (4th ed.). Thousand Oaks, CA: Sage.
- Guest, G., Bunce, A., & Johnson, L. (2006). How many interviews are enough? An experiment with data saturation and variability. *Field Methods*, 18(1), 59–82.
- Given, L. M. (2012). *The SAGE encyclopedia of qualitative research methods*. Thousand Oaks, CA: SAGE Publications.
- Jung, A. (2002). Asian American wonder women: Executive sweet. Retrieved March 28, 2009, from <http://goldsea.com/WW/jungandrea/jungandrea.html>
- Kuzhabekova, A., & Almukhambetova, A. (2019). Women's progression through the leadership pipeline in the universities of Kazakhstan and Kyrgyzstan. *Compare: A Journal of Comparative and International Education*, 1–19. <https://doi.org/10.1080/03057925.2019.1599820>
- Kuzhabekova, A., & Almukhambetova, A. (2017). Female academic leadership in the post-Soviet context. *European Educational Research Journal*, 16(2-3), 183-199.
- Lipovka, A. (2018). "The Female Face of Academia of Kazakhstan" in Gadpaille, M., Horvat, V., & Kennedy. (Ed.) *Engendering Difference: Sexism, Power and Politics*. Newcastle, UK: Cambridge Scholars Publishing, pp. 122-139.
- Ragins, B. R., Townsend, B., & Mattis, M. (1998). Gender gap in the executive suite: CEOs and female executives report on breaking the glass ceiling. *The Academy of Management Executive*, 12(1), 28.
- Roberts, L. (2007). Bringing your whole self to work: Lessons in authentic engagement from women leaders. In Kellerman, B., & Rhodes, D. L. (Eds), *Women & Leadership: The State of Play and Strategies for Change*. San Francisco: Jossey- Bass.
- "The ratio of women and men in the higher education system at the executive level in Kazakhstan", by years, (2018). Available at https://gender.stat.gov.kz/page/frontend/detail?id=42&slug=-36&cat_id=8&lang=ru
- Weidman, J. C., & Stein, E. L. (2003). Socialization of doctoral students to academic norms. *Research in higher education*, 44(6), 641-656.
- Whitchurch, C., & Gordon, G. (2009). Changing academic and professional identities in higher education: The challenges of a diversifying workforce. In 31st Annual EAIR Forum, Vilnius, Lithuania.

- Whitchurch, C. (2006). Professional managers in UK higher education: Preparing for complex futures: Interim report.
- Whitchurch, C. (2008). Shifting identities, blurring boundaries: The changing roles of professional managers in higher education.
- “Women in academia”, 2020. Available at <https://www.catalyst.org/research/women-in-academia/>
- Yelibay, M. (2021). Department chair as mentor: perceptions of young female faculty members from Kazakhstan. *Journal of Professional Capital and Community*.