21. Yüzyılda Öğretmen Yetiştirme

Teacher Training in the 21st Century

UNESAK 2023 INESCR

International Necatibey Education and Social Sciences Research Congress

Uluslararası Necatibey Eğitim ve Sosyal Bilimler Araştırmaları Kongresi

26-28 October Ekim 2023

Extended Abstract Proceedings Book

Genişletilmiş Özet Bildiri Kitabı

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October 2023

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Prof. Dr. Kathy Cabe Trundle
Utah Devlet Üniversitesi/Utah State University

Dr. Xiaojing Kou
Indiana Üniversitesi/ Indiana University

Dr. Lukáš Rokos
South Bohemia in České Budějovice Üniversitesi/ University of South Bohemia in České Budějovice

Prof. Dr. Erdal Toprakçı
Ege Üniversitesi/ Ege University

Atölye Çalışmaları/Workshops

Prof. Dr. İsmail Karakaya
Gazi Üniversitesi/Gazi University

Doç. Dr. Yavuz Samur
Bahçeşehir Üniversitesi/Bahçeşehir University

Helene Claeys&Corinne Mancel
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Kongre Programı/Congress Program

26.10.2023 Thursday		
Time	**Activity**	**Location**
09:00 - 10:10	Congress Opening Ceremony	Şehit Öğretmen Aybüke YALÇIN Conference Hall
10:10 - 10:30	NEF Academic Chamber Orchestra	
10:30 - 11:00	Coffee Break	The Foyer
11:00 - 11:45 Keynote Speaker	Prof. Dr. Erdal TOPRAKÇI - Teacher Education Policies in the 100th Year of the Republic (Turkish)	Şehit Öğretmen Aybüke YALÇIN Conference Hall
11:45 - 12:30 Keynote Speaker	Dr. Lukas ROKOS - Visualizations in STEM Education: How Can We Use Drawing and Visual Models to Understand Student Ideas? (English)	
13:00 - 14:00	Lunch Break	Dining Hall
14:00 - 15:30 Workshop	Doç. Dr. Yavuz SAMUR - Game Friendly Teacher (Turkish)	Halil İnalcık Hall
14:00 - 15:30	Online Sessions	Microsoft Teams
15:30 - 16:00	Coffee Break	First Floor Hall
16:00 - 17:40	Oral Sessions	Classrooms
19:00	Gala Dinner	

27.10.2023 Friday		
Time	**Activity**	**Location**
09:00 - 10:30 Workshop	Helene CLAEYS and Corinne MANCEL - Building Bridges with eTwinning (English)	Halil İnalcık Hall
10:30 - 11:00	Coffee Break	First Floor Hall
11:00 - 12:30 Workshop	Doç. Dr. Duygu GÜNGÖR CULHA - Data Analysis through R for Educators (Turkish)	Computer LAB A
11:00 - 12:30 Workshop	Prof. Dr. İsmail KARAKAYA - Measuring the 21st Century Skills (Turkish)	Halil İnalcık Hall
13:00 - 14:00	Lunch Break	Dining Hall
14:00 - 14:30 Keynote Speaker	Dr. Xiaojing KOU - How can ChatGPT Be Used in Language Teaching and Learning? (English)	Şehit Öğretmen Aybüke YALÇIN Conference Hall
14:30 - 15:00	Coffee Break	The Foyer
15:00 - 15:30 Keynote Speaker	Prof. Dr. Kathy Cabe TRUNDLE - Arts Integration: STEAM Learning (English)	Şehit Öğretmen Aybüke YALÇIN Conference Hall
15:30 - 16:50	Oral Sessions	Classroom
17:00	Balıkesir City Tour	NEF Courtyard

28.10.2023 Saturday		
Time	**Activity**	**Location**
09:30 - 10:30	Closing Panel	Şehit Öğretmen Aybüke YALÇIN Conference Hall
10:30 - 18:30	Trip	NEF Courtyard

Çevrimiçi Oturumlar/Online Sessions

26.10.2023 Friday Türkiye Local Time 14:00-15:20 Chair: Petra Karvankova Online Session Hall			
Time	**Authors**	**Affiliation**	**Title**
14:00 - 14:20	Felea, Maria Iulia M*	Universitatea, "1 Decembrie 1918" din Alba Iulia	From Classical Assessment to Formative Assessment in Academic Education
14:20 - 14:40	Karvankova, Petra*; Vondruska, Jan	Faculty of Education, University of South Bohemia	Professional Kayumovalopment Training for Scientists: How to Communicate Science?
14:40 - 15:00	Pečiulienė, Lina*; Šimienė, Gerda	Vilniaus kolegija/Higher Education Institution	How to Enhance Pre-Service Teachers' Engagement in The Study Process?
15:00 – 15:20	Venera Sarbassova*	Taraz Regional University named after M.Kh.Dulaty	Formation of National Self-Consciousness of Teachers in a Cross-Cultural Competence-Oriented Environment

26.10.2023 Friday Türkiye Local Time 14:00-15:20 Chair: Filiz Tuba Dikkartın Övez Online Session Hall			
Time	**Authors**	**Affiliation**	**Title**
14:00 -14:20	Ceylan, Harun; Erdener, Mehmet A*	Balıkesir University	The Review of Academic Studies on Instructional Leadership Model in The Field of Educational Administration in Recent Years
14:20 -14:40	Juškienė, Vaiva O*; Voidogaite, Viktorija	Vilniaus kolegija | Higher Education Institution	The Disruptions Occurring in the Co-Operation of Teachers and Parents with ASD Children
15:00 - 15:20	Kayumova, Mehriniso*	Tashkent Şarkşinaslık State University	Some Methods Used to Teach Turkish as a Foreign Language in Uzbekistan

26.10.2023 Friday Türkiye Local Time 14:00-15:40			
Chair: Hülya Gür			
Online Session Hall			
Time	**Authors**	**Affiliation**	**Title**
14:20 - 14:40	Gür, Hülya*	Balıkesir University	Developing 21st Century Competencies of Prospective Mathematics Teachers for Teaching Stem Contexts: Stemcraft
14:40 - 15:00	Tamer, Sevda; İzgi Onbaşılı, Ümit; Sezginsoy Şeker, Burcu*	Balıkesir University	Analyzing the Opinions of Classroom Teachers on the Contribution of eTwinning Activities to Digital Literacy Skills
15:00 - 15:20	Aktaş, Feriha Ferhan*; Yıldırım, Bilal	İstanbul Sabahattin Zaim University	The Relationship between Teachers' Lateral Thinking Tendencies and Their Adopted Style of Classroom Management
15:20 -15:40	Kačinaitė-Vrubliauskienė, Dalia*; Trukšinienė, Danutė	Vilniaus kolegija | Higher Education Institution	Challenges Experienced by Teachers in Organizing Inclusive Education: A Case Study in Lithuanian Schools

26.10.2023 Friday Türkiye Local Time 14:00-15:40			
Chair: Renata Kondratavičienė			
Online Session Hall			
Time	**Authors**	**Affiliation**	**Title**
14:00 - 14:20	Rafukjanovna, Dilfuza Akhmedova*	TSUOS	Online Class as One of the Forms of Distance Teaching a Foreign Language at a University
14:20 - 14:40	Bertašienė, Inga; Kondratavičienė, Renata*	Vilniaus kolegija/Higher education institution	The Analysis of Pedagogical Studies: Students' Learning Experience in a Virtual Learning Environment: The Interaction with the Tutor and Other Learners
15:00 - 15:20	Zaripova Dilfuz Bakhtiyorovna*	Bukhara State University	Innovative Technologies in Language Teaching
15:20 - 15:40	Todor, Ioana *	"1 Decembrie 1918" University of Alba Iulia	An Investigation of Pre-Service Teachers' Motivations for Choosing a Teaching Career

26.10.2023 Friday Türkiye Local Time 14:00-15:20			
Chair: Hasene Esra Yıldırır			
Online Session Hall			
Time	**Authors**	**Affiliation**	**Title**
14:00 - 14:20	Esen, Betül; Dikkartın Övez, Filiz Tuba*; Tekkalan, Okan; Yoncacı, Ayşegül	Balıkesir University	The Effect of Mötemm Project Applications on Technology Acceptance and Use of Mathematics Teachers and Teachers' Opinions
14:20 - 14:40	Durmaz, Hüsnüye*; Çelik Keser, Hande	Trakya University	The Effect of Stem Education Practices on the Awareness Towards Stem Education and Opinions of Pre-Service Science Teachers
14:40 - 15:00	Karakoç-Topal, Özlem; Yıldırır, Hasene Esra; Gülay, Buse*	Balıkesir University	The Effect of Teaching with Multiple Representations on Science Pre-Service Teachers' Cognitive Structures about Electrochemical Batteries
15:00 - 15:20	Aydar, Melike*; Uyangör, Nihat	Balıkesir University	Determining the Qualities That Faculty Members at The Faculty of Education Consider Important in Teacher Training

26.10.2023 Friday Türkiye Local Time 14:00-15:40			
Chair: Blazek Vojtech			
Online Session Hall			
Time	**Authors**	**Affiliation**	**Title**
14:00 - 14:20	Betáková, Lucie* Dvoř ák, Petr; Tilp, Vojtě ch; Fuka, Vojtěch	University of South Bohemia	Critical Issues in English Language Teacher Education from the Point of View of Students at Teaching Practice
14:20 - 14:40	Blažek, Vojtěch*; Karvánková, Petra; Uhlíková, Renata	Faculty of Education, University of South Bohemia	Strengthening Geographic Concepts through Geographic Information Systems
14:40 - 15:00	Blažek, Vojtěch*; Rokos, Lukáš	Faculty of Education, University of South Bohemia	Virtual Versus School Reality: A Comparison of the South Bohemia Region and Upper Austria in the Implementation of Virtual Reality
15:00 - 15:20	Nicolaeva, Prascovia Dmitrievna*	Comrat State University	Teaching English Grammar through Phraseological Units
15:20 - 15:40	İsmatullayeva, Nargiza*	Tashkent State University of Oriental Studies	Teaching Approach in Instructing Specialist Subjects within the Domain of Translation Studies: “Text Translation and Editing”, “Translation of Media Texts”

26.10.2023 Friday Türkiye Local Time 14:00-15:20			
Chair: Semiral Öncü			
Online Session Hall			
Time	**Authors**	**Affiliation**	**Title**
14:00 - 14:20	Mubarakova, Dilshoda*	Tashkent University	Teacher Training Experience in the 100th Year of The Republic of Türkiye
14:20 - 14:40	Mubarakova, Dilshoda*, Yunusova, Nodira	Tashkent University	Improving the Qualifications of Teachers in the Field of Education
14:40 - 15:00	Raxmatjonova, Kamola*	Tashkent State University of Oriental Studies	The Importance of Linguistic Typology in Teaching Foreign Languages

Sözlü Oturumlar/Oral Sessions

26.10.2023 Türkiye Local Time 16:00-17:20			
Chair: Gülcan Çetin			
Session-1 Hall-207			
Time	**Authors**	**Affiliation**	**Title**
16:00 - 16:20	Çopur, Ahmet*; Önal, Hakan	Balıkesir University	Investigation of the 2018 Social Studies Course Teaching Program in Terms Of 21st Century Skills and Turkish Qualifications Framework
16:20 - 16:40	Yasemin Sayan; Mahbuba Tashpulat *, Gülcan Çetin	Kazah National Women's Teacher Training University	Comparison of Classroom Teacher Training Programs in Turkiye and Kazakhstan
16:40 - 17:00	Dilrabo Elmuratova & Güliz Şahin*	Gülistan Pedagogy University	Two World Nations in Education: A Comparison of Teacher Training Programs in Uzbekistan and Turkiye
17:00 - 17:20	Tursunay Baynazarova; Mahbuba Tashpulat; Gülcan Çetin; Yasemin Sayan *	Kazakh National Women's Teacher Training University	Comparison of Preschool Teacher Training Programs in Turkiye and Kazakhstan

26.10.2023 Türkiye Local Time 16:00-17:20			
Chair: Handan Ürek			
Session-1 Hall-208			
Time	**Authors**	**Affiliation**	**Title**
16:00 - 16:20	Ürek, Handan*	Balıkesir University	Determination of Argumentation Quality of Science Teacher Candidates in the Context of the Human Reproductive System Subject
16:20 - 16:40	Filiz, Ahsen*	Biruni University	Prediction of Teachers' Readiness for Change with Data Mining Algorithms
16:40 - 17:00	Matoušková, Radka*	University of South Bohemia in České Budějovice	Inter-Disciplinary Tasks in Lower-Secondary Textbooks, Their Stem-Related Classification, and the Process of Posing
17:00 - 17:20	Tuychieva, Nodira*	Tashkent Institute of Finance	Modern Approaches to Defining the Teacher's Role in Education.

26.10.2023 Türkiye Local Time 16:00-17:20			
Chair: Güliz Gür Şahin			
Session-1 Hall-209			
Time	**Authors**	**Affiliation**	**Title**
16:20 - 16:40	Hastürk, Gamze*; Hastürk, Gökhan	Tokat Gaziosmanpaşa University	Socio-Scientific Issues in the Cognitive Structure of Classroom Teachers: Mind Map Example
16:40 - 17:00	Şahin, Güliz*; Erdoğan, Damla; Özdemir, Aylin	Balıkesir University	The Confluence of the Art of Thinking and Creative Skills: The Contribution of Postgraduate Theses in the Field of Philosophy for Children to 21st Century Competencies
17:00 - 17:20	Yüksel, Muammer*	Ministry of Education	The Effect of Teachers' Characteristics in the Teaching Process on Students' 21st Century Skills: A Review on PISA 2018 Results

26.10.2023 Türkiye Local Time 16:00-17:40			
Chair: Hasan Hüseyin Şahan			
Session-1 Hall-210			
Time	**Authors**	**Affiliation**	**Title**
16:00 - 16:20	Korucu, Merve*; Şahan, Hasan Hüseyin	Mehmet Akif Ersoy Primary School	Investigation of Teachers' Lifelong Learning Tendencies in Terms of Different Variables
16:20 - 16:40	Ulukuş, Zeynep Ezgi*; Özen, Zeynep ; Karakoç-Topal, Özlem	Balıkesir University	Teacher Candidates' Awareness Towards Stem Activities and Their Motivations for Involving the Activities: Comparison of Preschool and Science Teacher Candidates
16:40 - 17:00	Tezcan, Fatma*	Muğla Sıtkı Koçman University	Being a Teacher in the 21st Century: A Journey from a Changing World to a Changing Educational Approach
17:00 - 17:20	Ismoiljonov, Shukhratjon*	Namangan State Institute of Foreign Languages	Meeting the Expectations: Essential Skills for 21st Century Teachers

27.10.2023 Türkiye Local Time 15:30-16:50			
Chair: Nihat Uyangör			
Session-1 Hall-101			
Time	**Authors**	**Affiliation**	**Title**
15:30 - 15:50	Gülburnu, Mehmet*; Özcan, Umut	Mersin University	Investigation of Secondary School Mathematics Teachers' Opinions on the Questions Book Used as a Supplementary Source
15:50 - 16:10	Kırtak Ad, Nilay*; Kandemir, Buse	Balıkesir University	The Effect of History and Philosophy of Science Course Enriched with the First Scientific Physics Experiments in History on Pre-Service Teachers' Beliefs about the Nature of Science
16:10 - 16:30	Sinem Güçhan Özgül; Nazlı Ruya Taşkın Bedizel*	Balıkesir University	Exploring the Cultural Diversity Awareness of Pre-Service Teachers in a Multinational Study Group
16:30 - 16:50	Dikkartın Övez, Filiz Tuba*; Yağlı, Gizem; Mecer, Zeynep; Kesriklioğlu, Merve; Örene, Sıdıka; Dalkılıç, Tugba; Deniz, Şebnem	Balıkesir University	Investigation of Pre-Service Primary School Teachers' Pedagogical Content Knowledge on Number Sense

27.10.2023 Türkiye Local Time 15:30-16:50			
Chair: Gülcan Öztürk			
Session-1 Hall-102			
Time	**Authors**	**Affiliation**	**Title**
15:30 - 15:50	Tuychieva, Nodira*	Tashkent Institute of Finance	Challenges and Solutions in the Digitization of Distance Education.
15:50 - 16:10	Yüksel, Muammer*	Ministry of Education	The Effect of Gender on Teacher Candidates' Attitudes Towards Distance Education: A Meta-Analysis Study
16:10 - 16:30	Elif Kuşoğlu*; Gülcan Öztürk; Gür, Hülya	Balıkesir University	Prospective Mathematics Teachers' Technological Pedagogical Content Knowledge Competencies for 21st Century Skills and Digital Proficiency Perceptions
16:30 - 16:50	Yünkül, Eyup*; Ahmet Melih Güneş	Balıkesir University	The Relationship Between Teachers' Self-Efficacy Towards Technology Integration and School Happiness

TABLE OF CONTENTS / İÇİNDEKİLER

CRITICAL ISSUES IN ENGLISH LANGUAGE TEACHER EDUCATION FROM THE POINT OF VIEW OF STUDENTS AT TEACHING PRACTICE

Lucie Betáková[1]
Petr Dvořák[2]
Vojtěch Tilp[3]
Vojtěch Fuka[4]

ABSTRACT

The aim of the paper presented jointly by teacher educators and their students is to identify so called critical issues in the training of English language teachers. The concept of critical issues is described first. Critical issues are components of educational contents, which are considered difficult, problematic, demanding or even fail for various reasons. In this particular paper we will report on a pilot study to other phases of research into critical issues in language teacher education. The pilot study was carried out with teacher trainees in their final year of a study programme for teaching of English at lower secondary school level. The students were asked to identify critical issues in all components of their teacher training programme, including student language competence, linguistic knowledge, literature and culture knowledge, and, last but not least, their school experience or teaching practice. Our research tools are based on various models of language teacher education built on competences. The results of the research should help initiate changes in study programmes of language teacher education not only at our university as they can provide insight into how teacher trainees feel about becoming language teachers.

Keywords: Critical issues, teacher training, English language teacher education, study programme

INTRODUCTION

As a part of a Grant agency of the University of South Bohemia team project, this paper deals with critical issues in English language teacher education from the point of view of students at teaching practice. The teaching practice plays a key role in preparing future teachers for their careers. However, it is crucial to understand the challenges students face during their training to enhance the quality of education provided. By examining students' perspectives, this study aims to reveal the gaps and difficulties that hinder their professional development. The paper aims to identify and analyse areas of training that students find challenging or struggle with, i.e. the critical issues (Nohavová et al., 2021).

The theoretical framework presents teaching practice and its importance in the context of English teacher education (Ortega & Madrid, 2006). It also shows that the education of future English teachers is a complex field that requires students to possess a wide range of skills and competencies. The theoretical part of the paper additionally describes the structure of the preparation of future English language teachers at the Faculty of Education at the University of South Bohemia.

METHOD

The empirical part of the paper entails qualitative research with the objective of identifying critical issues in English teacher education from the viewpoint of students at teaching practice. To fulfil this aim, we have set the following research questions:

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- What are the critical issues in English language teacher preparation from the point of view of students at teaching practice?
- According to students, what are the strengths and weaknesses of teaching practice?

In order to answer the research questions, we designed a survey consisting mostly of open-ended questions. It allowed respondents to express their feelings freely and to share their experiences.

The questionnaire was distributed to students at their final teaching practice and to the students who had recently finished it. The survey was sent to the students in the electronic version. The research sample finally consisted of 25 respondents, out of which 19 were females, and 6 males.

Before the students were to concentrate on critical issues, they were asked to evaluate the importance of individual components of their teacher training course – practical language development, ELT methodology, linguistic courses, history and culture of English-speaking countries, and literature written in English. They were to use a scale between 1 (least important) and 5 (most important). In another part of the questionnaire the students were asked to evaluate their abilities in the particular disciplines on the same scale. The components of the language teacher training course were based mainly on Klečková et. al., 2019 and European Portfolio for Student Teachers of Languages (Newby et. al., 2007) Finally, the students were to reflect on their teaching practice, both weekly and block type.

FINDINGS AND INTERPRETATION

In evaluation of the importance of the individual components of the teacher training course the students viewed practical language development as most important (4,52), followed by ELT methodology (4,12). Linguistic disciplines were in the middle (2,72), followed by history and culture (2,12) and finally by literature perceived as the least important component (1,52). As to the self-evaluation of the students they feel weak in linguistic disciplines (4,2), followed by history and culture (3,08), practical language (2,92), and literature (2,44). ELT methodology is, on the other hand, viewed as the students' strongest discipline (2,36).

In the most important part of the survey the students were to identify the critical issues in the teacher training course. We found out that linguistic disciplines seemed to be the most problematic area for students. Phonetics, morphology and syntax are challenging subjects to understand. At the same time, students lack the connection between theoretical knowledge in this area and English language teaching at elementary school, i.e. they do not understand the relevance of the subjects in the teacher training course for their future profession. Students would appreciate introduction of materials and activities that would enable them to make the subject more relevant to their future pupils. The second critical issue is related to this. Students find it hard to transform theoretical knowledge into a form that would be more understandable for their potential pupils. The third critical area seems to be the English language itself. The students are required to achieve C1 level according to CEFR. As there are no subjects devoted to it in the Master course, students feel that they need to practice their communication skills more. On the other hand, students evaluate the teaching practice very positively. They mentioned that the advantage is the experience itself and feedback they receive from the

methodologist and other students. The main weakness of the teaching practice is the dependence on the supervising teacher who may not be an ideal professional.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

The results of the study show that the critical issues perceived by our student teachers of English in their final year of study are all linguistic disciplines in the teacher training course and their little relevance for the actual language classroom. In the future, it is crucial to show the students how these disciplines are reflected in the curriculum of the elementary school, e.g. which grammar is being taught, which aspects of phonetics and phonology are crucial in teaching of pronunciation and grammatical structures at the elementary school level (e.g. pronunciation of endings -s and -ed in connection with English tenses.) Within the area of ELT methodology teaching of grammar seems to be the most difficult area, students would appreciate more practical examples and more opportunities to try things out at the teaching practice. As to the language development of the future teachers, it seems necessary to provide them with enough opportunities to communicate in English at high level throughout the whole teacher training course.

Through this study we have gained a lot of useful knowledge which will be implemented in our new course we have just started to design in accordance with the reform of teacher training by the Ministry of Education (Bořkovec et al., 2023) which is built around competency-based models of teacher education and on evidence from research. Within the ministry framework we are going to design a course that will be based on evidence from our own research like in this study and will undergo the process of accreditation next year.

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THE EFFECT OF HISTORY AND PHILOSOPHY OF SCIENCE COURSE ENRICHED WITH THE FIRST SCIENTIFIC PHYSICS EXPERIMENTS IN HISTORY ON PRE-SERVICE TEACHERS' BELIEFS ABOUT THE NATURE OF SCIENCE

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ABSTRACT

The aim of this study is to examine the effect of a history and philosophy of science course enriched with the first scientific physics experiments in history on pre-service teachers' beliefs about the nature of science. This study, which was structured as a pretest-posttest, experimental-control group quasi-experimental design, was conducted with 48 pre-service teachers who voluntarily chose the "History and Philosophy of Science" course in the fall and spring semesters of 2022/2023 at a state university in the Marmara Region. While the content specified by the HEC was followed in the control group, in the experimental group, the experiments determined by the researchers (Aristarchus determining the diameter of the Moon; Eratosthenes measuring the circumference of the Earth; Michelson-Morley measuring the speed of light; Archimedes the buoyancy of water) were conducted with the students in the classroom environment. The "Nature of Science Beliefs Scale" was used as a data collection tool. In line with the findings obtained in the study, although the mean post-test score of the experimental group was higher than that of the control group, no statistically significant difference was found.

Keyword: history and philosophy of science, physics experiments, nature of science

INTRODUCTION

The history of science is the story of scientific thought, culture, all mental activities of human beings, in short, the story of the birth and development of science (Doğan & Özcan, 2010). According to Güney and Şeker (2009), the history of science is a path that provides an environment in which students can interact with the culture of science. Through the history of science, students define, explain and analyze the nature of science, science, scientific methods, scientists as individuals and human beings, political factors affecting science, the variability of scientific knowledge, the relationship between theory and laws, and the relationship between science and society. It is argued that teaching science with a historical approach will contribute to students' successful learning of both the NOS concepts and the subject area (Ayvacı, 2007). It is argued that teaching science with a historical approach will contribute to students' successful learning of both the NOS concepts and the subject area (Ayvacı, 2007).

The aim of this study is to examine the effect of a history and philosophy of science course enriched with the first scientific physics experiments in history on pre-service teachers' beliefs about the nature of science. With this study, it is thought that pre-service teachers will be able to learn the process of scientific discoveries, the conditions and difficulties of scientists while making these discoveries, and how scientific knowledge emerges.

METHOD

This study, which was structured as a quasi-experimental design with pretest-posttest, experimental-control group, was conducted with 48 pre-service teachers who voluntarily chose the "History and Philosophy of Science" course in the fall and spring semesters of 2022/2023 at a state university in the Marmara Region. There were 23 pre-service teachers in the

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experimental group and 25 in the control group. The history and philosophy of science course is among the general culture elective courses specified by the Council of Higher Education (CoHE) and its content is the same in all departments. In this study, the content specified by the CoHE was followed in the control group. In the experimental group, while the same content was followed, the experiments determined by the researchers (Aristarchus determining the diameter of the Moon; Eratosthenes measuring the circumference of the Earth; Michelson-Morley measuring the speed of light; Archimedes the buoyancy of water) were conducted with the students in the classroom environment. The "Nature of Science Beliefs Scale" was used as a data collection tool. The findings obtained from the scale were compared using t-test for independent samples with the help of SPSS program.

FINDINGS AND INTERPRETATION

The Nature of Science Beliefs Scale was administered to the experimental and control groups as pretest and posttest. First, the difference between the pre-test scores was examined and as a result of the analysis, it was determined that there was no significant difference between the pre-test mean scores (p=.254). This result shows that the two groups had similar beliefs before the application.

After the end of the application, the scale was applied to the experimental and control groups again as a post-test. In line with the findings obtained in the study, it was determined that although the mean post-test score of the experimental group was higher than the control group, there was no statistically significant difference (p=.723).

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

In this study, the effect of a history and philosophy of science course enriched with the first scientific physics experiments in history on pre-service teachers' beliefs about the nature of science was examined. Although the average score of the experimental group was higher, no statistically significant difference was found.

As a result of the study, it is suggested that laboratory studies should be integrated more into the courses for pre-service teachers to understand the nature of science more easily, to love science more and to understand scientific knowledge better.

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TEACHER CANDIDATES' AWARENESS TOWARDS STEM ACTIVITIES AND THEIR MOTIVATIONS FOR INVOLVING THE ACTIVITIES: COMPARISION OF PRESCHOOL AND SCIENCE TEACHER CANDIDATES

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ABSTRACT

In today's world, where access to scientific knowledge is becoming easier day by day, it is not only essential to acquire knowledge but also to have specific life skills. The STEM approach can also effectively put the learned knowledge into practice and provide 21st-century life skills. At this point, increasing awareness of STEM in teacher education is crucial. This study aims to determine the awareness of prospective teachers studying science education and pre-school education, two branches that can help them start from the basics and provide sustainability at advanced levels, regarding STEM and to examine in depth what their motivations in reflecting it on activities depend on. The study sample consists of 63 teacher candidates studying in the 3rd and 4th grades of science education and pre-school education. The study was designed following the convergent design from mixed methods research designs. The "STEM Awareness scale" developed by Merder (2019) was used as a quantitative data collection tool, and open-ended questions prepared by the researchers were used as a qualitative data collection tool. Since the data did not show a normal distribution, non-parametric tests were used to analyze quantitative data, and qualitative data were analyzed with content analysis. In the study, it was determined that there was no significant relationship between the branches of the teacher candidates and their awareness levels, the frequencies of the scale items varied between 59-63, and there was high compatibility with all themes except the theme "It increases cognitive level skills."

Keywords: STEM, pre-school teaching, science teaching, 21st-century skills.

INTRODUCTION

One of the primary purposes of education is to ensure that students have basic life skills. At this point, using the STEM approach, which emerges as an interdisciplinary approach, can be effective in the education and training environment (Asghar et al., 2012). At this point, it becomes clear that STEM-related activities should be included in teacher education, and teacher candidates should be trained in this direction (Corlu et al., 2014; Yıldırım, 2020). When the literature was examined, it was seen that there were studies on a single teaching group or on determining the opinions of teachers. However, there was no study comparing prospective teachers in different disciplines. STEM education can start in the pre-school period with simple activities and continue in later stages. At this point, two essential branches stand out in terms of STEM education: preschool teaching and science teaching. This paper addresses the literature gap and three basic problem situations of teacher candidates based on their branches.

1. Is there a significant relationship between teacher candidates' branches and their awareness levels?

2. What are teacher candidates' motivation levels to include STEM activities in the future?

3. How does teacher candidates' awareness of STEM impact their motivation to include activities?

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METHOD

The design of the research is the convergent parallel design. The research sample consists of 63 teacher candidates, based on the demographic characteristics of the students: 35 female and five male for the 3rd-grade pre-service teachers, and 17 female and six male pre-service teachers for the 4th grade. As a data collection tool, for the quantitative part, the 'STEM Awareness Scale' developed by Merder (2019) was used to determine teacher candidates' perceptions regarding STEM education. For the qualitative part, 12 open and closed questions were prepared by taking the opinions of at least three experts to evaluate their motivation for including activities. A closed-ended question was used. Quantitative data were analyzed using the SPSS 27 program. In the analysis of qualitative data, the answers given by the prospective teachers to 12 questions were coded with descriptive analysis, certain concepts that were similar to each other were arranged within the framework of themes, and direct answers were included without any changes in the expressions. In order to ensure the reliability of the data, the researchers carried out the coding separately, and the points that were not compatible were discussed, and harmony was achieved.

FINDINGS

In the study, although there was a difference in the stem awareness levels of students according to grade level, no difference was found between the awareness levels of pre-school and science teacher candidates. Again, in the comparison made in terms of gender, no difference was found between men and women. In the qualitative findings, it was seen that the teacher candidates gave answers on the themes of associating with daily life, ensuring permanence, creativity, self-confidence development, and increasing cooperation. In addition, the qualitative findings determined that both groups were willing to use the approach and thought that their branch was the most advantageous in this sense. Teacher candidates can define the STEM approach correctly. When combining the data, the frequencies and percentages of the answers given to the scale items corresponding to the themes obtained in the qualitative findings were calculated and compared with the answers given. After data integration, it was determined that preservice teachers' comments related to association daily life, permanence, creativity, confidence, and cooperation themes were similar to scale items.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

At the end of the study, it was determined that teacher candidates could define the STEM approach correctly. A study conducted with science teacher candidates determined that the teacher candidates could define the approach correctly (Ekici, 2022). When the mental models of preschool teacher candidates on the subject are examined, it is seen that they have all the components that can be included in the STEM approach. In this respect, the study is compatible with the literature.

In addition, it was determined that teacher candidates in both branches had similar awareness levels, but according to their grade levels, the awareness of 4th graders was higher. Another study comparing the STEM awareness levels of science and mathematics teacher candidates determined that there was no difference according to branch (Er & Acar, 2020). However, Er and Acar (2020) worked at all four grade levels and determined that there was no difference at

the 3rd and 4th-grade levels and that there was a difference between the 3rd and 4th grades and the 1st and 2nd grades. The most important reason for this difference may be differences in sample sizes. When the opinions of the teacher candidates and their awareness were compared, it was determined that consistent results were obtained.

Regarding the findings and results of the study, it is recommended that science teacher candidates follow current publications more frequently and participate in national and international projects to improve themselves and increase their motivation by gaining practice. For preschool teacher candidates, the 'STEM in Pre-School Education' course should be added to their curriculum to raise their awareness, and seminars and conferences on the subject should be organized regularly.

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THE ANALYSIS OF PEDAGOGICAL STUDIES STUDENTS' LEARNING EXPERIENCE IN A VIRTUAL LEARNING ENVIRONMENT: THE INTERACTION WITH THE TUTOR AND OTHER LEARNERS

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Inga Bertašienė[2]

ABSTRACT

Virtual learning environments (VLE) are technology-based learning spaces that allow students and teachers to interact, collaborate, share information and create knowledge regardless of time and place (Alonso et al., 2005; Garrison & Anderson, 2003). Although VLE have been used in higher education for 30 years, one of the most important factors in determining the quality of learning for future teachers' is the support provided by the tutor and other peers (Alkalaf, 2021; Targamadzė, 2020). This support is particularly important for students studying in mixed way (Graham et al., 2013), when studies in a real classroom are combined with learning in a virtual learning environment. The research problem is what kind of support can be provided by the lecturer and other learners that would enable future educators to interact in solving real-life problems and reflect on the study process. The aim of the study was to analyse the learning experiences in mixed way of future teachers' (students of Primary Education Pedagogy and Early Childhood Pedagogy). The results of the quantitative research (survey) suggest that the engagement of future teachers in the learning process and their reflection depend on the study methods used during lectures and the support provided by tutors and peers.

Keywords: Students of pedagogical studies, the interaction with the tutor and Peers, learning experience in a virtual learning environment, survey

INTRODUCTION

The use of virtual learning environments (VLEs) in education has increased in recent years, as they offer various benefits for learners and educators, such as flexibility, interactivity, and accessibility (Geros mokyklos koncepcija/ The concept of a good school, 2015; Lietuvos Pažangos Strategija Lietuva/ Lithuania Progress Strategy Lithuania 2030, 2012, etc.; OECD Employment Outlook 2019; World Economic Forum, 2020, etc.). VLEs are interactive online spaces that allow learners and educators to communicate, collaborate, and access various learning resources and activities (Fisher, 2014; Barana et. al, 2017; Alkalaf, 2021). VLEs can be used as a pedagogical tool to enhance experiential learning, which is the process of learning by doing and reflecting on one's own actions and outcomes (Asad et al., 2021). Therefore, it is very important how the lecturer organizes the learning process: what learning strategies he/she uses, how he/she combines the virtual learning environment with the classroom work. This is particularly important for future teachers (McLaren, 2015; Thonney & Montgomery, 2019). Therefore, a strong emphasis is placed on communication and collaboration with other peers and tutors, solving real problems and reflecting both in the real classroom and in the virtual learning environment.

METHOD

A quantitative research approach was chosen for the study. The study group was drawn using convenience sampling. Participants of research are full-time, full-time session and part-time form future teachers' studying in mixed way. The sample is 234. Of them, 98 are students of primary education pedagogy and 136 are students of early childhood pedagogy study programs.

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The principles of research ethics were followed throughout the study. Cronbach's alpha coefficient value is 0.739.

The data were analysed according to 2 parameters: Tutor support and Peer support. The Mann Whitney and Kruskall-Wallis criteria were used for data that were not distributed according to the normal distribution. Study adhered to the fundamental principles of the European Code of Conduct for Study Ethics (ALLEA, 2019).

The research was conducted in April 2023 using the virtual survey tool https://apklausa.lt.

Methods of research: analysis of literature, survey, descriptive statistics, and inference statistics.

FINDINGS AND INTERPRETATION

The analysis of the results shows that students' reflection and interpretation of the study process depends on the study methods used and the support provided by the lecturer and other students.

Using Spearman's test, it was found that Primary Education Pedagogy students find studying attractive when the learning is oriented towards the students' interests and what they are learning is relevant to their professional practice. However, this is also determined by the use of study methods during lectures. The following are more often study methods used when working with full-time session and part-time students than with full-time student's folder method, document analysis, interactive lecture, mind map and educational games. However, case analysis and study trips are more often used when working with full-time students than with full-time session and part-time students.

It is important for learners when the tutor encourages students to participate in study process. It is more important for students of Primary Education Pedagogy (Mdn = 128.21, n = 98) than Early Childhood Pedagogy (Mdn = 106.17, n = 136). Students also indicated that the tutor model's critical self-reflection. First-year students feel more than students in other courses that the tutor stimulates my thinking and the tutor models' good discourse.

It has been found that the involvement of future teachers' in the learning process enables them to see the meaning of their studies by creating, exploring, testing and verifying alternative solutions to problems that are relevant and understandable to the students, to pursue not only the objectives of the specific subjects, but also to achieve reflective thinking, focusing on solving the problem, raising questions, reflecting on the learning process, as well as to develop a sense of responsibility, understanding the value of self-development and lifelong learning (Barana et. al, 2017; Fisher, 2014).

Using Spearman's test, it has been found that Primary Education Pedagogy students find studying attractive when the learning is oriented towards the students' interests and what they learn is relevant to their professional practice. However, this is also determined by the use of study methods during lectures. The following were highlighted by the students of pedagogical studies creative tasks (r = 0.344), educational games (r = 0.286), mind maps (r = 0.249), project activities in groups (r = 0.272), work with visual industries (r = 0.234) methods.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

Examining both the world (OECD, 2019; World Economic Forum, 2020) and National Education documents (The Good School Concept, 2015; Lithuania's Strategy for Progress, 2012) and in scientific literature indicates, then order to successfully solve real life problems, it is important for the future teachers during study process feel the support provided by the tutor and other learners (Ellis, 2004).

Using Spearman's test, it has been found that studies in mixed way for students of Primary Education Pedagogy are attractive and important when they are exposed to methods during lectures that allow them to solve real problems, reflect on their own experience, analyse and evaluate the information discussed in the course of the discussion, to learn from each other, to work in a group, to create, to make conclusions, and to apply their theoretical knowledge in practice. Future teachers indicated that they not only applied theoretical knowledge through creative tasks and group work but were active and critical. The analysis of the data from the study supported the claims of Alkalaf (2021) and Žydžiūnaitė & Arce (2021) that future teachers' achievements depend not only on educational context, the teacher's innovation and creativity to manage the educational process professionally, but also pedagogical interaction.

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CHALLENGES EXPERIENCED BY TEACHERS IN ORGANISING INCLUSIVE EDUCATION: A CASE STUDY IN LITHUANIAN SCHOOLS

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ABSTRACT

Starting in 2024, Lithuanian Education Law will abolish discriminatory legal provisions and barriers for children with disabilities from attending the nearest mainstream school, receiving quality education and the necessary educational support. Thus, the transition from the concept of education for all to education for each, allowing for a transition to the needs of every learner and to enabling education alongside their peers. A key role in the implementation of this concept falls on the teacher. The aim of the study is to highlight the challenges that arise for teachers in organising inclusive education for children with disabilities. In order to explore the implementation of inclusive education in mainstream schools through teachers' experiences of inclusive education for pupils with disabilities, data was collected using the semi-structured interview method, and the analysis of the qualitative data was carried out using the qualitative content analysis method. The study revealed that teachers face a number of challenges in organising inclusive education. To overcome such challenges, the cooperation of the entire school community, including the parents, the administration, professionals such as social pedagogues and psychologists, and fellow teachers is extremely important.

Keywords: Inclusive education, school community preparation, students with disabilities

INTRODUCTION

Having moved away from discriminatory attitudes towards pupils with special educational needs on the basis of their exceptional abilities, congenital or acquired disabilities (handicaps, impairments, etc.), learning disabilities and difficulties, or the influence of adverse environmental factors, mainstream schools need to ensure quality education and appropriate educational support for children of all needs in order to achieve quality inclusion in education. Dukpa (2021) outlines the key principles of inclusive education, such as the qualification and confidence of teachers, the use of creative teaching methods to include children with disabilities in the collective educational process, and the recognition of the individual differences of students. The teacher holds the primary responsibility for ensuring that these principles are met. The teacher's role in the implementation of inclusive education for pupils with disabilities in mainstream schools has been examined by a number of researchers. Avramidis (2002) examined the factors influencing teachers' acceptance of inclusive education in the mainstream classroom and found that the positive attitudes of teachers towards inclusive education are influenced by the nature and severity of the pupils' disabilities. Akalin (2014) found that teachers face a significant lack of knowledge, skills, experience and parental support in implementing inclusive education and in designing adapted or personalised curricula, modifying the content of the curriculum, and dealing with the various behavioural problems of children with disabilities. Štemberger (2015) examined the attitudes of educators towards the inclusion of children with disabilities in the classroom and school activities, while Jigyel (2018) confirmed that parental engagement with school professionals improves the social skills and academic achievement of students with disabilities, and vice versa – parental disengagement and lack of involvement impairs the academic performance of children with disabilities. Therefore, it can be argued that

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successful teachers are those who know how to teach all students, take responsibility for ensuring that all students are able to learn in the classroom, and find alternative ways of involving all students in school life.

METHOD

A study that aims to highlight the challenges faced by teachers in organising the inclusion of children with disabilities was carried out in Lithuanian schools, in order to identify how to train teachers to be able to organise inclusive education for children with disabilities, i.e. to be able to teach all pupils, to take responsibility for ensuring that all pupils are able to learn in the classroom, to find alternative ways of involving all pupils in school life. In order to investigate the experiences of teachers in organising inclusive education for pupils with disabilities in mainstream schools, data was collected during semi-structured interviews and qualitative content analysis was used to analyse the data obtained from the qualitative research.

The participants were 8 general education teachers from 4 different schools in one district who volunteered to take part in the survey.

FINDINGS AND INTERPRETATION

The survey revealed that:

- teachers educate children with different disabilities. According to the participants, children on the autism spectrum, children with complex disabilities, Down syndrome or significant intellectual disabilities are educated in a special education classroom, followed by a social skills classroom, and for some of the pupils mentioned above, education is organised at home. Children with mild and moderate disabilities are educated in collective classrooms;
- teachers are not always aware that a child has special needs when they come to school;
- teacher preparation for educating children with disabilities is primarily based on information about their needs, getting to know their parents, and cooperating with the special educator and other educational support professionals. After reflecting on the educational process, teachers prepare adapted or individual programmes, incorporating a wide variety of educational methods and creating a supportive educational environment. Where necessary, teachers receive further training on relevant issues related to the education of children with disabilities through various in-service training events;
- teachers are trained to educate children with specific learning disabilities, language and communication disorders, behavioural and emotional disorders, visual impairment, hearing impairment, and mild intellectual disabilities. The study revealed that teachers are not prepared to educate children on the autism spectrum, blind children, deaf children and children with significant intellectual disabilities;
- communication and cooperation with parents/guardians is an important factor in ensuring the quality of inclusive education, and a positive attitude of parents towards their child and mutual support (parents and teachers) for the child in the educational process makes the educational outcome more effective;
- mutual (parent and teacher) support for the child in the educational process, a mutually good relationship between the pupil and the teacher, appropriate selection of the teacher's educational methods according to the child's individual abilities, and the creation of a positive

learning atmosphere in the classroom, all contribute to the teacher's positive attitude to any child with a disability and to the attainment of the educational goal;

- sufficient numbers of teaching assistants and the expertise of teaching assistants to support both children with disabilities and their teachers;
- teachers need to be able to put theoretical knowledge into practice, which is why it is important for teachers to take an interest in different types of disability, to study the literature, and to acquire competences and experience through seminars and training;
- inclusive education for children with disabilities involves reducing class sizes, increasing funding for educational resources, adapting the physical environment and increasing teachers' supplemental pay for children with disabilities;
- shortage of specialists – teachers reported a lack of educational support specialists such as sign language teachers, teachers for the blind and visually impaired, physiotherapists, as well as teaching assistants;
- there is a shortage of teaching assistants and they are not competent to support a child with a disability during lessons. The participants in the study noted that the support provided by teaching assistants to a pupil varies considerably depending on the extent to which the teacher has specific pedagogical knowledge and is able to apply it to their work. Teachers working as teaching assistants provide quality support to a child with a disability, not by doing tasks for the pupil, but by involving the pupil in the educational process;
- teachers recommend changes to the requirements for teaching assistants and suggest that they receive specific training before starting work in a school;
- parents do not recognise their child's disability. By not recognising their child's disability, parents make it more difficult for teachers to educate their child, by not agreeing to an adapted or individualised programme for their child, and by not cooperating with teachers;

teacher training should take into account the findings of the study, as this would ensure that teachers are properly prepared to organise inclusive education.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

The role of the teacher in the inclusion of pupils with disabilities is indisputable, and without the commitment of teachers there can be no good results in the educational process: teachers' attitudes towards the inclusion of children with disabilities in mainstream schools affect their commitment to working with these pupils. However, the study showed that teachers face many challenges in organising education for pupils with disabilities, and that collaboration and teamwork with the school community, professionals and parents is a key factor in ensuring that inclusive education for children with disabilities is well organised.

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INNOVATIVE TECHNOLOGIES IN LANGUAGE TEACHING

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ABSTRACT

The future of every society is determined by the level of development of the education system, which is an integral part of it and a vital necessity. Today, there are tasks to improve language education, raise it to a new level of quality, introduce advanced pedagogical and information technologies, and increase the effectiveness of education. This depends on the mental thinking, knowledge experience and professional training of the young generation. In the article "Opening the fist", "My flower" "Introduction from us - conclusion from you", "Continue the pairs of words", "Relative in content, alien in form", "I start, you continue", "Dominanta" game the essence is revealed. When the lesson is conducted using interactive methods, there will be no backward, non-learning student in the class. A friendly atmosphere is created among students. Almost all students are involved in the lesson process and their interest in the lesson increases. In the future, students will be given the opportunity to gain independent knowledge and learn a trade. This article discusses the best practices in the field of modern education and innovative technologies, an understanding of the approach to education, and the peculiarities of modern teaching methods in language teaching.

Keywords: Quality of education, innovative activity, approach, pedagogical field, game technique

INTRODUCTION

Innovative educational technology is a methodology for organizing educational activities that includes some new or qualitative improvement of existing methods and tools in order to increase the effectiveness of the educational process and create conditions for educational activities that are most consistent with the current trends of socio-economic development. Innovative activities in education include complex activities aimed at the emergence of innovations in the field of education. These innovations can be methods of organizing the educational process, resources used in the educational process, scientific theories and concepts.

Innovative technologies in the field of education are constantly developing and their types are expanding. Any method invented by the teacher should be able to help the student learn. The methods presented in the article were tested in language teaching classes at the academic lyceum, and good results were achieved. The future of every society is determined by the level of development of the education system, which is an integral part of it and a vital necessity. The future development depends on the intellectual thinking, knowledge experience and professional training of today's young generation.

Didactic game technologies are used in the educational process in the form of a didactic game lesson. In these classes, the learning process of students is combined with game activities. That is why they are called lessons that are combined with the learning activities of students. The following tasks are performed in human life through game activities:

1. A person's interest in a certain activity increases through the game.

2. Communication - helps to master the culture of communication.

3. A person's own talent creates an opportunity to express interest, knowledge and identity.

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4. Prepares to overcome various difficulties that occur in life and during the game, develops the skills of getting the target correctly.

5. In the course of the game, an opportunity is created to acquire behavior in accordance with social norms and eliminate shortcomings.

6. Prepares the ground for the formation of positive traits and qualities of a person.

7. The participants of the game are expected to develop a culture of team communication.

The essence of the technology of the interactive method is to rely on the creativity of students and create an environment of free discussion in the lesson. According to this method, lessons are divided into several stages:

1. Challenge stage. At this stage, the aim is to activate the students, get into the essence of the topic, and prepare them for the process of understanding it.

2. Brainstorming. This method can be used at the beginning of the lesson or anywhere. At this stage, the problem is given to the students through brainstorming and is revealed through their thoughts.

3. Understanding stage. Conclusive thoughts on the topic are heard and filled with new thoughts by the student.

4. Thinking stage. It is assigned to describe in writing the acquired knowledge and concepts on the topic in short sentences.

The class is divided into groups to complete this task. Each group writes its opinion on the task, and each group representative informs others about the completed task.

Working with groups can be started from the first stage, not only in the brainstorming session. In order for students to work in groups, it is necessary to follow the following requirements:

1. Grouping is done by the teacher.

2. A leader is appointed to each group.

3. It is necessary to achieve equal level of knowledge of students in each group.

4. The group should sit in a circle.

5. In the work process, attention is paid to the activities and ideas of each group.

In addition to these, it is important to give clear guidance to groups, to allocate enough time to complete tasks, to encourage strong groups, and to evaluate the results of the work. It is also possible to change group members during the lesson.

The interactive method includes such methods as "Working with small groups", "Debate", "Intergroup competition", "Brainstorming", "Critical thinking". The following innovative methods can be used in didactic games, in the part of asking and reinforcing the topic taught in the lesson.

Here is a review of some didactic games:

1. "Opening the fist" (“Mushtni ochish”): The condition of this game is that students are divided into 3 or 4 groups. One student from each group comes out and stands with fists. It is necessary to open the fist using beautiful words and magic words.

Students of the 1st group will have to be opened by a student of the 2nd group. The game continues like this.

The use of this game increases students' vocabulary and teaches them to speak according to the standards of the literary language.

2. "My flower" (Mening gulim): In this game, students sit in a circle. There will be flowers on the table. Students take any flower they want from the table, and as many as they take; they compose a beautiful text of as many sentences or give information on a certain topic. This game can be used to ask questions, to reinforce a new topic, and in final exercises. Purpose: to teach students to think freely and independently, to give clear and concise answers about the knowledge they have received.

3. "The introduction is from us - the conclusion is from you" (Muqaddima bizdan – xotima sizdan): This game will be held in the final training in the reinforcement part of the lesson. The game can be played between groups or using each student. The condition of the game is that a word is said, a new word is said to the last letter of the said word.

For example: Adjective

Beautiful - warm - hard – black

Sifat – so‘z turkumi

Chiroyli-iliq - qattiq - qora

The purpose of the game is to develop the spirit of competition in the group, to encourage vigilance, to increase vocabulary, and to teach respect for the opinion of others.

4. "Continue the word pairs" (So‘z juftlarini davom ettir) game: This game can be used to pass the topic "Word Pairs" and "Antonyms".

For example:

Word Pairs	Antonyms
kiyim - … (kechak)	do‘st - … (dushman)
Axloq - … (odob)	botir - …(qo‘rqoq)
idish - … (tovoq)	oq - … (qora)
ota - … (ona)	yorug’lik - … (zulmat)

5. "Relative in content, stranger in form" (Mazmunan qarindosh, shaklan begona) game: In the organization of this game, students are divided into groups. The group that starts the game makes a sentence with one of the meaningful words. The second group changes the form of the sentence by replacing similar words. The student gets points for each changed sentence.

For example: The borders of my country are unique. The borders of my country know no borders.

Masalan: Vatanim sarhadlari betakror. Yurtim sarhadlari chegara bilmaydi.

6. "I start, you continue" (Men boshlayman, sen davom ettir) game: Students are divided into two groups, the first group starts the condition, the second group is required to continue. At the academic lyceum, in the 1st stage, the topics "Antonyms", "Pairs of words", "Compound words" can be used in passing.

Antonyms:

Qo‘rqoq - …(botir)

Kecha- .. (kunduz)

Word Pairs:

Izzat - …(ikrom)

Sovg’a - … (salom)

Compound words:

Sof …(dil)

Bag’ri…(keng)

Compound sentences:

Ko‘z qo‘rqoq - … (qo‘l botir)

Hamal keldi - … (amal keldi)

7. "Dominanta" game: This game is conducted on a specific topic and identifies words that do not belong to that topic (neutral words). This game can be used in the topic "Words" and "Synonyms". For example:

Dushman, yog’iy, bosqinchi, ado;

Vatan, el -yurt, diyor, dahr;

Yuz, aft, bet, bashara, agar;

Osmon, samo, ko‘k, qizil

2. Find words which do not belong to the adjective.

Xasis, ziqna, agar, hamda, oqil, dono, ziyrak, adolat, shox, odil, zukko, farosatli, mevali, durkun.

Greedy, stingy, if, and, smart, wise, justice, horn, fair, clever, prudent, fruitful, stable.

In conclusion, it should be said that didactic game lessons should be aimed at solving the educational, developmental goals and tasks noted in the program; focus on important problems and solve them during the game; conformity to the principles of education of a perfect human personality and the norms of Eastern etiquette; the structure of the game should be in a logical sequence; in these lessons, didactic principles should be followed and great results should be achieved with the least amount of time spent. After all, the goal of linguistics is to educate a perfect person who thinks independently.

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HOW TO ENHANCE PRE-SERVICE TEACHERS' ENGAGEMENT IN THE STUDY PROCESS?

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ABSTRACT

This study reports on the findings from a study that aimed at investigating the pre-service teachers' attitudes towards their engagement in the study process. In this study, a mixed methods research design was used. A total of 70 pre-service preschool and primary teachers participated in the research. The data were collected using an online survey, which comprised both quantitative and qualitative questions. The quantitative analysis demonstrated that the vast majority of the informants felt actively engaged in the study process, whereas the performed content analysis of pre-service teachers' responses revealed key elements that make studies engaging, including practical applications, clear communication, personal experiences, active learning, teacher trainers' motivation, applied varied teaching approaches, linking theory with practice, interactive lectures, exposure to external experiences, flexibility, and innovation.

Keywords: Engagement in the study process, higher education, pre-service teachers

INTRODUCTION

In recent years, the concept of student engagement in the learning process has piqued scholarly interest across higher education (Fang et al., 2023; Lopéz et al., 2023; Parveen et al., 2021; Rahim, 2020; Sá, 2023; Snijders et al., 2021; Zhang, 2020). Although there is no unanimous agreement in defining student engagement, it has been commonly determined that it should encompass student dedication to organizing their study process and programme structure seeking the optimization of their academic performance (Jafaar et al., 2012). Thus, students demonstrate engagement by diligently studying course materials, participating in discussions with academic staff about assignments, progress, and career plans, and seeking feedback on their performance (Byun, Kang, & Law, 2020; Lopéz et al., 2023; Zhang, 2020). Students also engage with peers, utilizing both face-to-face and online interactions, not only for social purposes but also for academic collaboration, such as discussing assignments and sharing course experiences (Fang et al, 2023). Community engagement is also significant, including involvement in campus or external activities as members of various clubs, societies, and organizations (Jafaar et al., 2012).

Despite extensive studies of student engagement in higher education, the investigations into the engagement of pre-service teachers in the process of studies are less numerous (Durksen & Klassen, 2012; Hammerness et al., 2020; McElroy & Chitpin, 2018). Hence, the present study focuses on pre-service teachers' engagement in the study process, which is considered the underlying factor in enhancing student satisfaction, well-being, and better academic performance during the studies, ensuring a more creative and engaging organization of the study process, as well as building on their future teaching expertise and professionalism.

The aim of the present study is to reveal pre-service teachers' attitudes toward the opportunities for promoting their active engagement in the study process. The following research questions guide the study:

1) What factors facilitate pre-service teachers' active engagement in the study process?

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2) What measures should be considered by the teaching staff to ensure more active and successful engagement of all pre-service teachers in the study process?

Despite extensive studies in the field, there is no unanimous agreement in defining student engagement (Byun et al., 2020; Fang et al., 2023). Although many different definitions of student engagement have been coined, this study builds on the definition of Bond et al. (2020): "the energy and effort that students employ with their learning community, observable via any number of behavioural, cognitive or affective indicators across a continuum" (p. 3).

METHOD

A mixed methods research design (comprising one closed-ended and three open-ended questions, and a section of demographic data) was used to attain the aim. The study employed a survey based on Ferre Laevers's 'Engagement Scales' (1994, 2018, Learning Journals, n.d). Ferre Laevers' Engagement Scales, particularly the Leuven Scales of Well-being and Involvement in Learning, have primarily been utilized in early childhood and primary education contexts to measure engagement and well-being in young learners. The authors of this article decided to adapt the involvement scale to evaluate the higher education students – pre-service teachers of ECEC and Primary Education involvement in the study process.

The study sample was constructed by a non-random sampling method, which allowed the identification of the individuals that were easy to access (Best & Kahn, 2006). The research sample consisted of 70 participants. All the participants were 1st-3rd-year students of Early Childhood Education and Primary Education study programmes at Vilniaus Kolegija/Higher Education Institution. All the participants were women, aged 19 to 51. The study was performed in September 2023.

The survey data were analyzed employing content analysis that allowed encoding and categorizing the collected data, looking for authentic linguistic expressions and language fragments, determining their frequency and relationships, as well as the discourses of communication (Vaismoradi et al. 2013).

FINDINGS AND INTERPRETATION

The study comprised one quantitative and three qualitative research questions. The results of the quantitative survey question, which employed a five-point Likert scale, showed that a remarkable portion of the participants, constituting 86 % of the total respondents demonstrated a noteworthy degree of engagement in the learning process, displaying an active interest in the academic material demonstrated by attentiveness, completion of assignments, and a desire to learn more.

The remaining three questions were open-ended; hence, the content analysis was conducted. Firstly, the students were asked to expand on what lecture and practicums' activities, assignments, teaching methods, techniques, tools, environments, etc. they find most conducive to their learning and engagement: do motivate, inspire, or help to achieve better results? The analysis of the pre-service teachers' responses allowed distinguishing three categories: 1. Engagement through Practical Application; 2. Clear Communication; and 3. Active Learning Methods. The first category embraces the following sub-categories: real-life related activities; non-traditional environments; subjective experiences or life stories of teacher trainers; practical

assignments; and applicability of knowledge. Three sub-categories were distinguished in the second category: effective presentation of learning material; quality communication; and exemplification of assignments. Meanwhile, the third category incorporated group work and discussion; engaging activities; blended learning; and teacher encouragement sub-categories. Students expressed a preference for practical tasks, and engaging activities that relate directly to real-life scenarios, also when teachers integrated personal experiences or life stories into their lectures, as it made the content more relatable and engaging. Engagement increased when activities were conducted outside the classroom, such as visits to relevant institutions or participation in conferences and events.

These identified categories and corresponding sub-categories collectively emphasize the need for interactive, practical, and innovative teaching methodologies, integrated with clear communication and personal experiences, to enhance student engagement and facilitate effective learning.

In the 3rd question, the students were also asked to explain how the elements of studies, that they mentioned in the previous answer are useful and important to them. The analysis of the pre-service teachers' responses allowed the distinction of two categories: 1. Enhanced learning quality, and 2. Development of professional identity. The first category embraces the following sub-categories: a better and deeper understanding; helps to remember; increases awareness of the application; helps to stay focused and interested; and helps to prepare for exams. The second category embraces the following sub-categories: inspiration, motivation, sense of belonging, and sense of confidence. The analysis shows that elements students mentioned in the previous question motivate students to continuously seek knowledge and strive for improvement and can be seen as important contributors to their quality of learning and the development of their professional identity.

Finally, the students were asked to expand on study methods, activities, etc. what they feel is missing in the study process to make it effective, interesting and engaging. Some answers were left blank or were uninformative (“I don’t know”), a lot of students claimed that they were satisfied with the current situation, and nothing was missing according to them, some students shared their ideas on what would be beneficial to add to their studies, such things as diverse interactive teaching approaches, environments and methods, along with more flexible evaluation system were identified, interestingly some students highlighted the need of more extended usage of technology and distance learning while others preferred to have more live contact work with trainers instead.

CONCLUSION

Content analysis of students' responses revealed key elements that make studies engaging, including practical applications, clear communication, personal experiences, active learning, teacher trainers' motivation, applied varied teaching approaches, linking theory with practice, interactive lectures, exposure to external experiences, flexibility, and innovation. Students provided insights into what they felt was missing in the study process to enhance effectiveness and engagement. These included a desire for more interactive activities, real-life relevance in studies, practical assignments, balancing theory with practical application, individual work

options, diverse teaching approaches, clear learning outcomes, reduced information overload, and more practical technology integration, among others. Students highlighted the need for clarity, engagement, and dynamic teaching methods, as well as the inclusion of experiments and new technologies for an enriched learning experience. These conclusions emphasize the importance of assessing and enhancing engagement in pre-service teacher education to cultivate effective and enthusiastic future educators. Additionally, the identified categories shed light on strategies and areas that can be addressed to optimize the learning process for pre-service teachers.

RECOMMENDATIONS

Data collected through the scales and the results of the study can be used to enable evidence-based decision-making and continuous improvement of teacher education programs to better meet the needs of pre-service teachers. Based on the content analysis of the students' responses regarding their engagement in the study process and the factors that contribute to it, the main recommendations would be to encourage teacher trainers to incorporate more practical tasks, group work, games, and activities directly related to real-life scenarios, to communicate with students clearly and effectively, to design lectures that involve discussions, interactive activities, and opportunities for group dialogue, to organize learning outside of the classroom, etc.

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THE EFFECT OF STEM EDUCATION PRACTICES ON THE AWARENESS TOWARDS STEM EDUCATION AND OPINIONS OF PRE-SERVICE SCIENCE TEACHERS

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Hande Çelik Keser

ABSTRACT

The aim of the study is to examine the effects of STEM education practices on pre-service science teachers' awareness of STEM and STEM education and their views on the implementation process. The study was designed as one group pretest/posttest pre-experimental design. The study group was consisted of 30 pre-service teachers studying in the science teaching program in 2018-2019 academic year. According to the findings, it can be expressed that the participants' awareness developed positively, and they understood the importance of interdisciplinary relationship and integrated structure of the STEM approach.

Keywords: Pre-service science teachers, STEM education, STEM awareness

INTRODUCTION

When the innovative educational approaches of countries around the world are examined within the framework of science education in recent years, STEM education, which is integrated with different understandings, methods and techniques of Science, Technology, Engineering and Mathematics disciplines and is based on an interdisciplinary learning approach, attracts attention (Bybee, 2013).

However, STEM teacher training is vitally important because teachers have little or no experience in STEM education during their pre-service training; professional development opportunities for pre-service teachers (PSTs) to have an experience in integrated STEM education are still limited (e.g. Brown & Bogiages, 2019; Wang, Charoenmuang, Knobloch, & Tormoehlen, 2020). Also, PSTs participating in STEM practices have feelings of anxiety, fear and self-inadequacy about how to carry out the practices (Eren & Dökme, 2022). PSTs' understandings and experiences with STEM education will affect their STEM practices in their future classrooms. For these reasons, there is a need to investigate PSTs' awareness of STEM and STEM education and their opinions about STEM education.

The literature shows, changes in pre-service teachers' concepts of STEM education are investigated. To this end, for example, Radloff and Guzey (2017) implemented a video-based instructional intervention for integrated STEM practices over a period of time through semi-structured pre- and post-interviews. In another study, Aydın-Günbatar, Öztay and Ekiz-Kıran (2021) used a mental model protocol before and after an instructional intervention that is focused on the engineering-design process. Based on the data obtained, researchers suggested that STEM practices were effective in PSTs' conceptualization of the integrated STEM approach.

Within the scope of this study, an instructional environment was created for the PSTs to experience STEM education practices in both student and teacher roles, and it was aimed to examine the effects of STEM education practices on their awareness of STEM and STEM education and their views on the implementation process.

METHOD

The study was designed as one group pretest/posttest pre-experimental design. The study group was consisted of 30 PSTs studying in the science teaching program in the 2018-2019 academic year.

Data Collection Tools

STEM-Awareness open-ended questionnaire (STEM-A): This questionnaire, developed by Tezsezen (2017), consists of 2 parts, and was used as a pre- and posttest. STEM awareness of the participants was examined using the definition of STEM disciplines and STEM education in the first part, and through the reading texts presented for two case (Microbiological Corrosion and Radioactive Verbs) in terms of the relations between STEM disciplines in the second part.

Semi-structured interview form: There are 4 questions in the form. Interviews were held with 10 volunteer PSTs at the end of the instructional intervention.

Instructional Implementation Process

The study was conducted over a 9-week period with 30 third grade students enrolled in the Science Teaching Laboratory Applications I course in the 2018-2019 academic year. Within the scope of the study, 5 activities prepared using various sources were carried out with the help of worksheets prepared based on the literature. The activities were: Wind turbine design, Bioplastic production, Water purifier design, Life on Mars (supported by augmented reality application), and My Cell Model (using the Minecraft education version). The worksheets contained 5 sections: “Gaining Knowledge (What I Know / What I Want to Research / What I Learned)”, “Generating Ideas (Let's Design / Make a Plan)”, “Developing a Product (Let's Produce / Implement our Plan)”, “Let's Develop (Make Changes and Test Again)”, "Let's Introduce / Share", and "What I Learned during the Activity".

Analysis Of Data

Data analysis of the STEM-A questionnaire was evaluated with thematic analysis using Tezsezen’s (2017) study. Data obtained from semi-structured interviews were also analyzed with content analysis.

FINDINGS AND INTERPRETATION

Findings from the STEM-A Questionnaire

Based on the data obtained from the first part of the STEM-A questionnaire, it was determined that PSTs' awareness of the relationship between STEM disciplines and the integrated use of disciplines in STEM education showed a positive development in favor of the posttest. Regarding the case of microbiological corrosion and radioactive verbs in the second part of the STEM-A questionnaire, although the performance of the participants in recognizing interdisciplinary relationships was poor, it can be claimed that there was a slight increase in functionality, inter-relationships of disciplines and awareness of their effects on each other in the posttest, unlike the pretest.

Findings from Semi-structured Interviews

The majority of the participants stated that they may need the administration and collegial support and supply of materials if they apply STEM education in their professional lives, and that successful STEM applications depend on the collaborative work of both teachers and students. In their future applications, they stated integration of STEM disciplines can be achieved by including technology discipline into the science by using technological devices and mobile applications; engineering discipline by planning design-based applications and mathematics discipline by adopting activities that will develop mathematical competence.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

Based on the data obtained from this study, it can be argued that STEM education practices have a positive effect on the PSTs' awareness of the integrated structure of STEM disciplines and their understanding of the importance of collaboration between disciplines. This result is also supported by studies (e.g., Aslan-Tutak, Akaygün & Tezsezen, 2017; Aydın-Günbatar, Öztay, & Ekiz-Kıran, 2021; Radloff & Guzey, 2017; Tezsezen, 2017; Wang, Charoenmuang, Knobloch, & Tormoehlen, 2020). According to literature, management and peer support are important factors in teachers' participation in STEM teaching, and one of the main obstacles to effective integrated STEM education is the need for materials and resources for both practitioners and students (e.g., Haatainen, Turkka, & Aksela, 2021; Navy, Nixon, Luft, & Jurkiewicz, 2020).

Considering that understanding what STEM education is and how to implement it is a complex process (Dare, Ring-Whalen, & Roehrig, 2019), it is recommended to conduct longer-term studies to examine PSTs' STEM awareness and knowledge and skills on integrating STEM disciplines.

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INTER-DISCIPLINARY TASKS IN LOWER-SECONDARY TEXTBOOKS, THEIR STEM RELATED CLASSIFICATION, AND THE PROCESS OF POSING

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ABSTRACT

The fundamental idea of STEM approach is based on the similarity of the multiple subjects included in the approach, which, if properly connected, can achieve an intensive integration as well as a diversity of the disciplines that enables us to look at the world from multiple perspectives. In the previous study, we developed a categorization (coding tool) for analyzing textbook tasks from the perspective of STEM integration. The goal of the presented research is to verify the categorization and apply it. We show how the categorization can provide a useful background for creating authoring tasks that would support STEM integration. The process of creating two authoring tasks will be presented further in detail within the paper.

Keywords: cross-curricular task, STEM, textbook analysis, problem posing

EXTENDED ABSTRACT

The 21st century is full of innovations and this, unavoidably, concerns educational system as well. The emphasis has been especially put on teaching in context, i.e., in the form of cross-curricular relationships or integration of school subjects. Integrated tasks and tasks using cross-curricular relationships often relate to real life situations and are expected to motivate students to solve tasks and problems, teach them to search for and find the necessary information to solve a problem, work with literature and think in context (Barth, Bahr & Shumway, 2017; Berland & Steingut, 2016). Such teaching approach may be referred to as STEM education. Although STEM seems to be beneficial and has great potential for both teachers and students, it is also very demanding, and it brings significant difficulties (English, 2016). For instance, the curricular documents in the Czech educational system (see Ministry of Education, Youth and Sports, 2021) are somehow prepared for integration, but they do not take it into account in detail. School subjects such as Elementary science, Biology, Chemistry, Physics, or Mathematics, for instance, are taught separately (and often by different teachers) which can cause problems in understanding the broader context and interconnectedness of the acquired knowledge. It is clear then that the integration of educational content will have to be associated with significant curricular changes, changes in the organization of teaching, but also in the preparation of pre-service teachers.

Fortunately, in the recent years, relationships between different educational contents have been supposedly implemented in selected textbooks, so we have focused our attention on them. In one of our previous studies (Rokos, Petraskova, Samkova, & Rajtmajerova, 2023), we observed textbook tasks from the perspective of STEM integration, and then developed a coding tool for them. The goal of the presented research is to validate and apply the coding tool and use it to support teachers who are interested in STEM and want to create their own original tasks with integrated educational content. We include examples from various textbooks and focus on their

content from a general perspective that applies for all STEM domains while making the individual STEM subjects and their relations visible.

In this proposal, we report ongoing research. So, we will be able to present more details about the process, and our findings will be compared with the existing research related to the topic (e.g., Dare, Ellis, & Roehrig, 2018).

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ONLINE CLASS AS ONE OF THE FORMS OF DISTANCE TEACHING A FOREIGN LANGUAGE AT A UNIVERSITY

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ABSTRACT

The modern education system, including in the field of teaching foreign languages, is determined by two irreversible progressive factors: the intensive development of information technology and fierce competition in the educational services market. The leading role of distance learning in these processes is undeniable. The question is to optimize the use of innovative resources to solve linguistic problems. Today we can already draw the first conclusions from the lessons of the universal "remote work", the transfer of the entire education system to work in a remote format. There are, of course, many more scientific articles, discussions, discussions, presentations, dissertations, etc. ahead. It is obvious that we have witnessed the most large-scale educational experiment in the history of mankind, covering 90% of kindergartens, schools, colleges, and universities in the world. Today, in many countries, including Uzbekistan, intensive processes of standardization and informatization of education are underway, ways to increase its effectiveness are being developed, the teaching community is financing the development of the capabilities of new information technologies and tools, and the development on their basis of new methods of educational activities, including open - not limited by space and time. The purpose of writing this article is to identify the main stages in the work of a teacher when conducting distance online classes, as well as to determine the positive and negative aspects of the work process.

Keywords: Distance learning (DL), virtual language environment, interactive learning, foreign languages

INTRODUCTION

The 2019–20 COVID-19 pandemic affected education systems around the world, leading to the massive closure of schools and universities. Today we can already draw the first conclusions from the lessons of the universal "remote work", the transfer of the entire education system to work in a remote format. It is obvious that we have witnessed the largest educational experiment in the history of mankind, covering 90% of kindergartens, schools, colleges, and universities in the world. It is already clear that the way out of the situation resulting from the coronavirus will not be quick and will last until the availability of a vaccine and universal vaccination of the population. This will take, according to various estimates, from 1 to 3 years.

Without a doubt, online learning is not just a long-term trend, but a fait accompli of our lives with a rapidly growing number of engaged users. At the same time, it is clear that the transition to online learning does not mean the successful digitalization of education. For now, this is a technological transition, but not a methodological one. Today, many users have a stereotype that online education means inevitable boredom at the computer, a painful ordeal for children and families. But in vain! The most interesting and important things await us in the near future. The coronavirus has required a massive digital transformation of the world's population, its adaptation to life online, and, in fact, in a convergent online/offline environment. The same happened in education, which suffered less than other sectors of the economy and even showed a certain increase in the efficiency and social significance of teaching work.

The purpose of writing this article is to identify the main stages in the work of a teacher when conducting distance online classes, as well as to determine the positive and negative aspects of the work process.

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Compared to chat classes and web classes, individual online classes are becoming increasingly important, which undoubtedly have a number of advantages:

– the ability to choose your favourite educational institution;

– establishing individual terms and pace of training, taking into account the characteristics of the student;

– immersion in the language environment, constant communication with native speakers;

– the opportunity to learn the language at a convenient time, in any place convenient for the student;

– comfortable classes at home;

– concentration in class;

– free access to reference literature;

– the ability to record a lesson and then play it back;

– the ability to work independently, in addition, there is the opportunity to receive advice from a teacher at any time;

– significant savings in money;

– the ability to compile electronic dictionaries.

In this article we will take a closer look at the stages of a teacher's work and the pedagogical features of preparing for a distance lesson.

STAGES OF WORK.

Selection of technical equipment.

In order for the learning process to be successful, communication between the teacher and the student must be carried out in the presence of additional technical means, primarily the student's computer. The computer must have a webcam, in addition, the ZOOM program must be installed, as well as fast Internet. Based on our own experience, we advise you to pay attention to the presence of headphones and a microphone for both the teacher and the student, which significantly improves the quality of speech sound. As in regular lessons, students can use notebooks, pens, and additional literature.

Conducting a trial lesson:

the first trial lesson can be very short; during this period of time, the teacher should get to know the student, discuss the schedule of individual lessons, determine their duration and regularity. And the most important thing is to identify the purpose of learning a foreign language, set goals, identify the strengths and weaknesses of the training, and adjust the individual program for classes.

Definition of basic teaching methods and techniques:

After conducting a trial lesson, the teacher should determine suitable methods and techniques for further work with the student in accordance with his individual characteristics, interests,

goals, select material and various programs depending on the level of foreign language proficiency.

For individual lessons, we recommend using the communicative method, which is aimed at quickly and effectively mastering oral communication skills - speech and its listening comprehension, this allows you to quickly start communicating in a foreign language in real life situations in a short period of time.

Training of basic types of speech activity:

When training reading, you can read and discuss fiction together, perform a set of exercises aimed at training specific grammatical phenomena and new vocabulary. Working in the ZOOM program allows you to listen to and view modern online publications and news in the language you are learning.

Summing up the work in the lesson:

This stage of work is to identify the degree of mastery of new material by the student in order to make changes to the working methodology in accordance with his individual characteristics. One of the fastest forms of testing vocabulary and grammatical skills are various online tests, where you can find out the result immediately after completion.

Strict adherence to the logic of work and objective assessment should be combined with praise for the student's first achievements.

Many students do not like doing homework, but regular monitoring will help develop the student's independence and self-organization. After conducting an online lesson, the teacher should select and send electronic homework to the student's email, which he must complete independently and send to his teacher for checking before the start of the next lesson. After this, the teacher should correct the errors in order to discuss them before the next lesson. Homework should be done regularly, but it should not be boring or a burden.

Preparation of the online material used:

In order for the lesson to meet modern requirements, the teacher can recommend:

– before the start of the online lesson, select the material that the teacher plans to use in the lesson. During the lesson, this material can be used in electronic form through the additional option in the ZOOM program "screen sharing";

- during the learning process, stick to working on the planned materials: these can be textbooks in PDF format from foreign publishers, all kinds of methodological developments for lessons, dialogues, visual materials, books to read, etc.

Selection of didactic materials for the lesson, taking into account individual characteristics:

It is difficult to attract the attention of modern young people only with text tasks; it is much better to conduct classes in a playful way, as well as in the form of discussions. The teacher should try to clarify difficult moments in the lesson with some example, illustration, etc., and

also not forget about working in a foreign language lesson with poems, tongue twisters, songs, visual material.

Using modern techniques.

CONCLUSION

Thus, from the above it follows that, despite the existing difficulties and disadvantages of online classes, distance learning has many advantages in that it erases spatial barriers and allows you to learn a language together with its native speakers from different countries. Students get the opportunity to develop skills such as tolerance, willingness to seek a compromise solution and respect other people's opinions. Consequently, we can conclude that distance learning helps solve some psychological problems of young people, expands their communicative sphere, and contributes to the development of motivation to learn. In our opinion, in the future education will be continuous no matter where the student is. To achieve all the above-mentioned goals and features of the foreign language teaching process, online classes will be increasingly used

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THE IMPORTANS OF LINGUISTIC TYPOLOGY IN TEACHING FOREIGN LANGUAGES

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ABSTRACT

The article considers of the role of linguistic typology in linguistics, its interrelationship with other disciplines, and the importance of typology of modern languages. Also, theories about the study of common and specific features of languages in linguistic typology, the main methods in linguistic typology are presented. The main problems encountered in the typological analysis of foreign languages and their solutions are presented.

Keywords: Linguistic typology, diachronic, synchronic, comparative-historical method, primary language, morphological, genetic.

INTRODUCTION

Modern linguistic literature shows that linguistic typology began in the West with the works of F. Schlegel. Then A.V. Shlegel, V. Humboldt, H. Shteintal, A. Shleicher, E. Sepir, V. Skalichka, A. Martine, F. F. Fortunatov, I. I. Meshchaninov, B. Uspensky, Yu. V. Rozhdestvensky, V. N.Yartseva and others conducted research[2]. However, when the views of Eastern scientists on linguistics were studied, a large amount of scientific-linguistic information related to linguistic typology was observed in production works. In particular, the early forms of comparative-historical linguistics can be seen in the works of Mahmud Kashgari, Alisher Navoi, Zahiriddin Muhammad Babur.

In the years of independence in Uzbekistan A. Abduazizov, J. Boronov, Q. Scientists such as Toymetov, M.Iriskulov were engaged in issues of typology[3]. Boronov J. Comparative grammar of English and Uzbek languages. - T.: Teacher, 1973. - B.283.

Cross-language learning aims to study translation, linguo-philosophical, linguo-didactic and theoretical issues.

METHOD

Linguistic typology is the analysis, comparison, and classification of languages according to their common structural features and forms. This is also called cross-linguistic typology. “The branch of linguistics that studies the structural similarities between languages, regardless of their history, as part of an attempt to establish a satisfactory classification, or typology, of languages” is known as typological linguistics.

Studying the typological theory of languages is a complex process. For this, a linguist needs strong skills and a good theoretical mastery of several languages. A characteristic feature of linguistic typology is that languages belonging to two systems are intermixed at all levels. Specific characteristics of languages and signs of convergence of languages are determined.

The typological study of foreign languages with the native language is one of the relatively new fields in linguistics. Cross-typological study of languages is to determine the similarities and

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differences between selected languages regardless of whether they belong to the same type or not according to their origin and development, structural, semantic and functional status. In cross-typological linguistics, similarities and differences between languages do not depend on whether they belong to the same type or not.

CONCLUSION

Studying foreign languages typologically is a somewhat more complicated hybrid process. In such a case, the learner of an oriental language must first of all determine the linguistic features of the mother tongue, its unique aspects, as well as the universals of the language from the point of view of general linguistics. As a result of mixing in such a process, the private and general nature of languages is clearly visible. This situation helps to students to learn the foreign language.

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THE DISRUPTIONS OCCURRING IN THE CO-OPERATION OF TEACHERS AND PARENTS WITH ASD CHILDREN

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ABSTRACT

This paper explores the barriers to collaboration between educators and parents of children with autism spectrum disorder (ASD). Parent-educator cooperation determines the child's involvement in education and further social life. Cooperation is hampered by the working conditions of the teacher and the stress experienced by the parents of the ASD child. In order to describe and investigate the experiences of pre-school educators in the face of an000000000+ ASD child's rage attack, a phenomenological study was conducted. The study aimed to 'capture' the phenomenon by asking what it means for an educator to experience a child's rage attack. The question reveals what does an educator experience when confronted with a child's self-injurious behaviour? The questions are inspired by scientific literature and sources. It emerges that the barriers to cooperation between the educator and the parents of a pre-school ASD child are the educators' lack of preparation for working with an ASD child. The study reveals that collaboration is stagnating due to the teacher's working conditions: working alone with an overcrowded group, not receiving financial support for competence, not having an assistant, not having the competence to collaborate with the parents of an ASD child, working overtime, and not being able to engage with the parents. Another barrier to parent-teacher collaboration is the lack of preparation of teachers to work with ASD children and their families. Although higher education institutions are updating their curricula with a focus on ASD awareness, the specificities of child development and the strengthening of competences in working with families. A phenomenological study on the experiences of educators revealed that the study participants experienced 'stagnation', not knowing how to act. The common feature was that the children's fit of rage would start suddenly, and the educator was momentarily unable to take any action. The emotional fear and insecurity are revealed when the shock passes and the educator's actions are directed towards defending the children and himself. The participants in the study experience insecurity because they are unprepared to deal with sudden fits of rage in children.

Keywords: Disruptions, rage attack, ASD, teacher, parents, inclusion

INTRODUCTION

The article analyses disruptions occurring in the cooperation of teachers and parents with ASD children. Such a child's involvement in education and further social life is based on a close collaboration between ASD child's parents and their kindergarten teacher. However this fundamental cooperation gets disrupted due to some complicated conditions that the teacher has to face at their work: the teacher has to work alone with an overcrowded group, they do not receive any financial support needed to obtain the necessary qualification, they do not have the assistance they need, they are not competent to collaborate with the parents of an ASD child, they do overtime hours of their scheduled contact time with children which results in them not being able to even initiate a collaborative connection with the parents of their children. Yet another disturbance in their cooperation is the stress that the parents of an ASD child have to undergo due to financial instability, neglecting personal needs, unanswered social needs, insecurity, isolation, and a sense of humiliation. In 2019 a phenomenological survey was done.

RESEARCH METHODOLOGY

The study does not try to formulate a problem to be solved or to count the number of such experiences, but rather to "catch" the phenomenon "here and now", asking what it means for an educator to experience a fit of rage in the child next to him. The question allows us to discover what an educator experiences when confronted with a child's behaviour that harms himself or others? These questions were inspired by reviews of scientific literature and sources, which

show that the main barriers to cooperation between educators and parents of a pre-school child with ASD are the inadequate preparation of educators for working with a child with ASD.

Aim of the study: to investigate educators' experiences of experiencing a tantrum with a child with ASD.

The hermeneutic methodology of phenomenology is a tool that provides the researcher with a stimulus of freedom and creativity, but requires care, time, and patience in the face of constant uncertainty. As Van Manen (2016b, p. 2) observes, 'hermeneutic phenomenology and the human sciences find themselves on opposing sides of conventional research'. This occurs because the human sciences (i.e. including pedagogy) are a field of practical activity, which "is a field of practice that is not only practical because of the practical workings of human science pedagogy and its desire to make an impact" (Van Manen, 2016b, p. 3).

FINDINGS AND INTERPRETATION

Despite changing attitudes towards the education of children with ASD, there are still obstacles that prevent a fully inclusive education. Communication and interaction between parents and teachers, which is crucial for the child's participation in education and further social life, is still insufficient. However, this fundamental cooperation is hampered by the teacher's difficult working conditions: the teacher works alone with an overcrowded group, does not receive the financial support needed to ensure adequate competence, does not have the necessary assistance, does not have the competence to cooperate with the parents of an autistic child with an ASD, and does not work overtime in terms of contact time with the children, which makes him/her incapable of establishing a cooperative relationship with the parents.

Another barrier to parent-teacher cooperation is the apparent lack of preparation of teachers to work with children with ASD and their families. Despite the fact that recently higher education institutions have been updating their curricula for preschool and pre-primary education, with a greater focus on knowledge of ASD, the peculiarities of educating children with ASD, and the strengthening of competencies in working with families, the amendment to the Law on Education of the Republic of Lithuania on Inclusive Education coming into force on 1 September 2024, will leave the vast majority of teachers ill-prepared to deal with children and their families with ASD.

A study on the experiences of educators when they are confronted with a meltdown of a child with ASD opens up a part of the educators' home world. The educators' experiences revealed what is essential in the encounter with a sudden fit of rage. It revealed what every educator can benefit from when confronted with a fit of rage in a child with ASD. The experiences of educators in the study focused on themes of loss of power and insecurity:

- the participants in the study experienced a loss of power (feeling angry), often repeating that they could not do anything and did not know what to do in such a situation. The stories also have in common that the children's tantrums start suddenly, and unexpectedly, and that the teacher was unable to take any action for several moments;

- sensory fear and insecurity are revealed when, after the stagnation/shock has passed, the educator's actions are directed towards defending the children and himself. The participants in

the study also experience insecurity because they are practically unprepared to deal with children's sudden meltdowns.

Lithuania has five colleges and four universities that train preschool teachers. There is widespread awareness of the problems that educators face when working with children with ASD. Teacher preparation is identified as one of the reasons for the quality and success of teachers' work with children with ASD.

It was important to review the curricula used to train preschool educators to determine whether and how much attention is paid to the development of educators' competencies to cooperate with parents. This is an issue worthy of further investigation, but the authors did not intend to carry out a detailed contingent analysis of the curricula. The only information reviewed was that which is freely available to the public on the websites of higher education institutions and the Open Information Consultancy System (AIKOS).

Higher Education Institutions explicitly identify the specific competencies that a future teacher acquires, such as one college's statement: 'Respects the individuality of the child. Recognize and take into account children's individual needs, help them overcome educational difficulties, refer parents/guardians for counselling and pedagogical support, and cooperate with educational support professionals. The same, more modestly, is stated by another college: "Will understand the educational context of children with special educational needs (inclusive education) and gifted children."

One university offers a special module for early childhood education, which includes as many as 10 credits on "Developing the capacity for social inclusion". Another university trains preschool and primary education specialists and provides 5 credits to equip future teachers with competencies in special education.

Institutions that train preschool teachers declare that graduates will be able to "work with children with special needs" after completing the program. It is clear from the teacher education programs that students are introduced to special needs, but there is no specific focus on working with parents of children with special educational needs, let alone on working with parents of children with ASD. Even if the higher education institution organizes a practice to learn about special educational needs, students have virtually no targeted contact with parents of children with special educational needs. One university module description specifies the following learning outcome: 'Able to create a collaborative preschool environment with the family, and this outcome is achieved through the following method: 'Lecture, discussion, reading of articles, discussion-reflection'. This method does not create contact with the parents of children with special educational needs.

CONCLUSION

Thus, although higher education institutions, when training students, pay adequate attention to the presentation and theoretical knowledge of inclusive education, and in recent years have updated the content of study programs, paying special attention to the knowledge and educational peculiarities of children with ASDs, educators are practically not prepared to work with a child with an ASD. One of the reasons for the stagnation of cooperation between parents of autistic children with ASD and preschool teachers is that higher education institutions that

train preschool teachers do not develop this competence for cooperation in practice, and it is mainly limited to the theoretical level.

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PROFFESIONAL DEVELOPMENT TRAINING FOR SCIENTISTS: HOW TO COMMUNICATE SCIENCE?

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ABSTRACT

This proposal offers a description of part of an EU-funded project that aims to support scientists in engaging with the public on issues related to climate change. The project is a collaboration between interdisciplinary research groups from five European academic institutions specialized in STEM education and science communication. The project aims at equipping scientists and science communicators with knowledge and skills necessary to engage the public in engaging and personally meaningful with concepts related to climate change. In the following text, we present one of the concrete outputs of the project: an example of prepared professional development training for scientists. The project also includes, among other things, the preparation of a) a set of scientific communication tools for scientists, b) interactive infographics and posters, or c) an e-learning platform with scientific communication resources focusing on climate change. As such, the project provides a set of easily accessible materials that have been implemented and tested in different EU contexts and can serve as an example of best practices related to public engagement in climate change related concepts.

Keywords: Climate change, science communication, professional development training

INTRODUCTION

In recent years, there has been a growing international acceptance that climate change poses serious threat to human wellbeing and ecological stability. In order to respond to climate change, governments, companies, and other organizations have been adopting practices for mitigating climate change and adapting to its impact. Another critical aspect of responding to climate change is public engagement as the required rapid social change demands the public's consent and participation (Kumpu, 2022; Whitmarsh et al., 2013). In the context of climate change, public engagement is usually linked to personal engagement and behavioural change in consumption and eating habits, energy use, transportation etc. However, public engagement may also be linked to democratic decision – making and involvement in a political struggle (Carvalho et al., 2017; Wibeck, 2014). Despite the importance of public engagement with climate change, however, barriers at multiple levels restrict the general public's action – taking (Whitmarsh et al., 2013). These are summarized into the following: a) individuals' understanding and perceptions regarding contribution to causing climate change, b) the low awareness of the extend of expert consensus on human – induced climate change, c) the perception of climate change as an irrelevant and distant issue and d) the perception that the response to climate change is only a governmental and industrial responsibility seem to reduce individuals' motivation and ability to change their behaviour towards climate crisis (Bouman et al., 2020). What this showcase is the urgency of climate scientists and science communicators implementing effective strategies in order to communicate climate change issues in a way that non – scientific audiences can understand their relevance with their lives and experiences and to inspire them to take action regarding climate crisis. However, scientists working within European universities at least, do not typically receive any institutional training to communicate climate change and scientific issues in general to the public. This is precisely, what we aimed to achieve with this project: to equip scientists with skills and knowledge necessary to increase the public engagement in science and particularly in actions related to climate change.

THE PROJECT OVERVIEW

The project is a result of a partnership of four universities and one research institute from five European countries: The Netherlands, Cyprus, Italy, Czech Republic and Greece. The research team brings together knowledge and skills in STEM education, climate, science communication and public engagement with science. There are four outputs in the project: 1) Science communication toolkit for scientists; 2) Professional development training for scientists; 3) Interactive infographics and posters; and 4) E-learning platform with science communication resources for scientists.

RESULTS

This contribution aims to present in more detail one of the partial outputs of the project, namely Professional development training for scientists. The entire training module was prepared by the University of South Bohemia from Czechia. The module consists of four units that demonstrate and approach scientific work through various activities and experiments and through which the public, scientists, pre-service and in-service teachers can understand the issue and lead the pupils and students to enlightenment as well. The module is developed in a mixed format. In particular, the target group must explore in advance several selected resources related to the topics under investigation (based on the resources that can be found in the Toolkit and the developed infographic, participate in face-to-face teaching based on independent work and experiments. At the same time, the whole unit is supplemented with asynchronous teaching. The whole module aims at a deeper final discussion and reflection, while working with the active participation in the topic. The training module consists of four activities:

1. *A planet from nature: the territory of scientists or a place for human life?* The introductory part of the module with the aim to realize what impact climate change has on people's lives, how the results of scientific work, approached and presented to the public, can affect these impacts.
2. *Thank You for the Rain* – asynchronous teaching (independent work) with core ideas: to realize the impact of climate change on people's lives; learn about the problems that farmers in the developing world have to face; realize that climate change needs to be addressed at different levels of the organization of human society; will understand the importance of rain and its need for agriculture and the population dependent on a permanent climate system; take a look at international events in the issue of climate change; they will realize that even small civic actions in their own neighbourhood can bring about change.
3. *Island of plastic waste*. This activity aims to arouse interest in the issue of ecology and recycling. It uses discussion, critical thinking, and questioning. It is important for participants to be aware of the interconnectedness of the world and its ecosystem so that they can behave and act accordingly in the future.
4. *Storytelling Will Save the Earth* (feedback of activities) – climate change is complicated and can often feel far removed from our lives. Sharing our personal stories about climate change can place facts into context and can help us understand how it is relevant to our lives. Final discussion and brainstorming.

DISCUSSION AND CONCLUSIONS

The main goal of the project is to equip scientists and science communicators with the skills and knowledge necessary to increase public engagement in science in relation to climate change. To address these needs, a toolkit for scientists and science communicators has been developed as well as a professional development training for scientists by using innovative tools and means. Using the toolkit, which include both theoretical aspects as well as concrete examples and best practices for public engagement with actions related to climate change, scientists and science communicators will be able to improve their professional practices on science communication and public engagement by also integrating cutting edge technology tools as well as to cultivate long-term values rooted in mind-sets driven and developed through the public engagement. At the conference we will be able to show the activities more in detail as well as provide illustrative statements of feedback received from participants of the course.

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COMPARISON OF CLASSROOM TEACHER TRAINING PROGRAMS IN TURKIYE AND KAZAKHSTAN

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Gülcan Çetin[3]

ABSTRACT

The aim of the research was to examine classroom teacher training programs in Turkiye and Kazakhstan. The research was conducted using document analysis, one of the qualitative research methods. The websites of the Council of Higher Education and Balıkesir University served as sources for the data regarding Turkiye, the website of Kazakh National Girls Pedagogical University for data regarding Kazakhstan during the document analysis. In the light of the data collected from these sources, it was determined that there were similarities between the programs implemented in Turkiye and Kazakhstan in terms of the classroom teacher training program.

Keywords: Classroom teacher training program, classroom teachers, comparative education

INTRODUCTION

It is obvious that basic education is one of the important steps in children's educational lives in this century because classroom teachers play a very important role in the social, psychological and cognitive development of the child. It is equally important to train classroom teachers, who have such an important role in the child's educational life. When considered from this perspective, classroom teacher candidates should acquire the equipment they will need in their professional lives during their pre-service training. Classroom teaching programs should meet the needs of teacher candidates and prepare them well-equipped for their future profession. The century we are in has brought about the development of systems by being influenced by each other, with the development of technology and information systems and the increase in relations between countries. For this reason, education systems today affect each other. In the literature, there are studies that have made comparisons on teacher training. These studies appear as programs, practices, and teacher training programs in different fields (Kazu & Aslan, 2011). It is thought that the results obtained from the comparison of Turkiye and Kazakhstan classroom teacher training programs will contribute to the literature.

METHODOLOGY

This study was conducted according to the document analysis method, one of the qualitative research methods. While the websites of the Council of Higher Education and Balıkesir University served as the source for the data regarding Turkiye, the website of the Kazakh National Girls Pedagogical University provided the source for the data regarding Kazakhstan during the document analysis. The obtained data were interpreted by content analysis in line with the sub-problems (Yıldırım & Şimşek, 2018).

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CONCLUSION

In this research, the similarities and differences will be presented in tables by evaluating the classroom teaching program' entrance conditions, the process after entering the program, the evaluation systems of the program, the courses in the program and their credits. Here the data obtained by comparing the classroom teaching programs implemented in Turkiye and Kazakhstan will be given supported by data from the literature. As a result, it has been determined that Turkiye and Kazakhstan classroom teaching programs have similar aspects as well as different aspects. Suggestions will be made in line with the effective aspects of the programs in both countries.

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PREDICTION OF TEACHERS' READINESS FOR CHANGE WITH DATA MINING ALGORITHMS

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ABSTRACT

The aim of the study is to predict which variables are effective on teachers' readiness for change by using classification analysis with data mining algorithms. WEKA programme, which is a data mining software, was used in the study. General survey model, one of the quantitative research types, was used in the study. The participants of the study consisted of 171 teachers working in public schools affiliated to the Ministry of National Education in different provinces in Turkiye. "Personal Information Form" and "Readiness for Change Scale" were used as data collection tools. In the study, it was concluded that the most important variable affecting teachers' readiness for change was age. It is thought that determining the most important factor affecting the readiness of teachers for change will shed light on the future research and will contribute to the use of data mining method as an example.

***Keywords*:** Readiness for change, teacher, data mining

INTRODUCTION

Today, we frequently come across the concepts of change and innovation. Especially the rapid development of informatics and technology and the information density that emerges with development have closely affected the field of education. Change, which aims to progress with the realisation of education, may encounter technical and human obstacles (Karacabey & Bozkuş, 2018). Studies have also revealed that humanitarian obstacles are more important than technical obstacles (Burke, 2017).

The education system, which interacts with social, economic, and political systems, has necessitated some changes in schools. In order for schools to successfully realise this process, there is a need for managers and teachers who have made continuous learning a philosophy of life and who are committed to change (Levent, 2016). Because it is not possible for the field of education to remain alien to the innovations developing and changing around it. The function of education to produce change can be explained as the reason for this (Mitchell, 2000). Teachers, who are the most important element of the field of education, have a critical role in the process as they are individuals who are both affected by change and affect change (Levent, 2016).

The 2023 vision document, which has been carried out in the name of change in education in recent years, is defined as a movement for change, development, and reform in education. The basic philosophy of this vision is to ensure that students acquire skills defined as 21st century skills such as critical thinking, communication, and technology. It is one of the most important responsibilities of teachers to provide these skills to students and to raise moral individuals who will meet the needs of the age. For this, it is extremely important for teachers to be ready for innovations and change before starting to change. From this point of view, it is aimed to predict which variables are effective on teachers' readiness for change by using classification analysis with data mining algorithms.

METHOD

Survey model, one of the quantitative research types, was used in the study. The participants of the study consisted of 171 teachers working in public schools affiliated to the Ministry of

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National Education in different provinces in Türkiye. Teachers were determined by simple random sampling method. "Personal Information Form" and "Readiness for Change Scale" were used as data collection tools. In the personal information form, information about teachers' gender, age, marital status, graduation level, type of school, professional seniority and subject area were included. In 2013, "Readiness for Change Scale" developed by Kondakcı, Zayim and Caliskan was used.

WEKA software, version 3.8.4, which is a data mining software, was used to determine which variables are effective in teachers' readiness for change. WEKA is an open-source software that includes many classification techniques developed by the University of Waikato in New Zealand (Aydemir, 2017).

FINDINGS AND COMMENT

Many decision tree algorithms are used when creating models according to the WEKA programme. In this study, according to the correct classification percentages of the algorithms, the most successful algorithm was found to be the Logistic Regression algorithm with an accuracy rate of 88.8889%.

Confusion matrix of Random Tree algorithm

In line with the data obtained, the most successful algorithm in the tree category was determined as Random Tree and the confusion matrix and the classes produced by the model are given below (Table 1).

Table 1. Confusion Matrix

		Predicted Class	
		Low	High
Actual Class	High	140	13
	Low	18	0

According to the Random Tree algorithm classification in Table 1, 140 teachers with a high level of readiness for change were correctly classified.

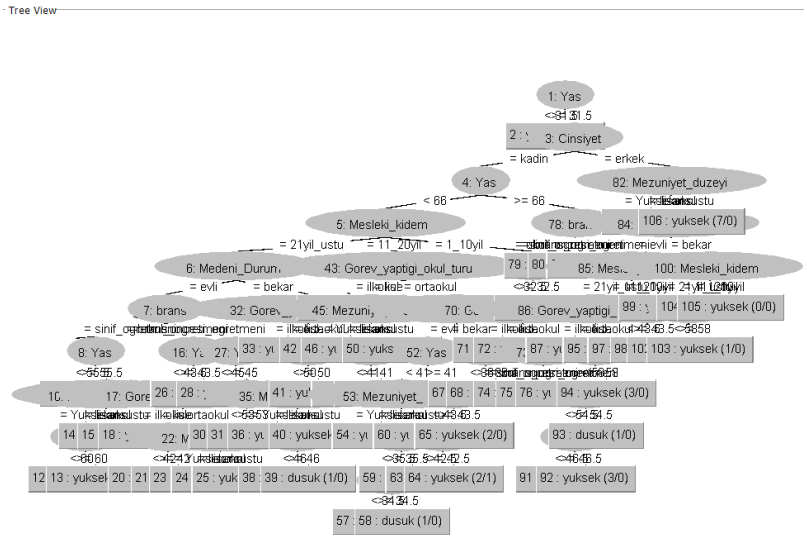

Figure 1. Random Tree algorithm decision tree for change readiness classification

In Figure 1, the branches produced by the Random Tree algorithm are given visually. According to this tree, it is seen that the variable that affects teachers' readiness for change the most is age.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

In the study, which variable is the most effective in determining the readiness of teachers for change was examined according to data mining analysis. The data obtained from the study with the WEKA programme used in data mining analysis revealed many algorithms and visual results. According to the branches produced by the Random Tree algorithm, it was concluded that the most important variable affecting teachers' readiness for change was age. Levent (2016) examined the readiness of teachers for change according to different variables and found that the age variable significantly differentiated teachers' readiness for change. Similarly, Er (2013) found a significant difference in teachers' perceptions of the school's openness to change in favour of those who are new in the profession according to age. Gılıç (2015) found that more mature teachers were more conservative about change. Therefore, it can be said that the age factor is at the forefront in teachers' readiness for change. With statistical studies, it can be determined which age groups show resistance to readiness for change. Qualitative and quantitative studies can be conducted together to investigate teachers' attitudes towards change in more depth. More generalisable results can be obtained by increasing the number of samples.

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STRENGTHENING GEOGRAPHIC CONCEPTS THROUGH GEOGRAPHIC INFORMATION SYSTEMS

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ABSTRACT

Despite the great progress in the field of cloud-based GIS, we are constantly encountering slow deployment in geography classes in Czech education. This paper describes how to start using this technology at all levels of education. The authors' approach is based on long-term observations in teaching and GIS workshops for primary, secondary and higher education. The main principle is to introduce the concept of GIS as a geographical time machine. In fact, the ability to work with temporal data, to respond to past, current, and future situations in geography classes have been identified as key to motivating pupils and students to work with this technology, motivating them to further their geography education and to strengthen basic geographic concepts.

Keywords: GIS, education, geography

INTRODUCTION

Each scientific discipline is characterized, among other things, by its professional language. The basic building blocks of professional language are key concepts that enable a clear understanding of the content of a given scientific discipline. Through key concepts, scientists assess the investigated reality. Key concepts therefore enable scientists to understand each other. In addition to understanding key concepts, we can support students' thinking by focusing on understanding the relationships between key concepts. These general truths should capture the nature, essence, and internal order of the given issue (eGeography 2017). Geographic information systems (hereafter referred to as GIS) make it possible to work with these concepts and thus students can master them better.

Thanks to web GIS, the creation of maps and thus geography has become a field that no longer deals with the local description of the landscape, but answers to socially important questions such as climate change, economic globalization, urban sprawl, loss of biodiversity, sustainable agriculture, water quality and quantity, crime, cultural diversity, energy, tourism, political instability, and natural hazards. These issues are growing in importance on a global scale, but they also increasingly affect our daily lives (Kim 2011, Milson 2012). GIS is a tool that provides students with holistic computing and management skills, increasingly recognized as a key part of national education curricula, and applied in many educational disciplines such as biology, history and economic education (Kerski 2018). Thus, GIS should be viewed more as a tool. And yet 70% of teachers do not work with GIS, only 16% do. 50% of respondents question the suitability of GIS for teaching. An interesting comparison is made by Rak (2017) with Finland, where in 2002 GIS was used in teaching by 4% more teachers than in 2016 in the Czech Republic. This contrasts greatly with the fact that GIS has been a part of Czech education (it is included in teaching at the faculties of pedagogy) since 1996, and there is therefore one generation of teachers who encountered GIS during their university studies. And yet we find only a few schools that are systematically devoted to GIS - they use it. This post presents the

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basic steps to a better understanding and greater involvement of GIS in the teaching of geography through a demonstration of the use of geographic concepts in combination with GIS.

METHOD

As part of GIS seminars and workshops for secondary and primary schools, we understand the concept of GIS as a time machine, on which we demonstrate the importance of individual concepts. This procedure has already been applied to 5 introductory GIS seminars at the faculty, 15 workshops for secondary and 10 elementary schools in the Czech Republic. The course of the introductory seminar or the workshop has three parts:

1. **Past**: Students must first locate their home or school on a current aerial map. In the next step, they add a historical aerial map and compare the change in their surroundings and try to evaluate this change.
2. **Current**: In this section, a current topic is selected after discussion with the students. Most of them are current topics associated with the natural activity of the Earth (wildfires, floods, volcanic activities, or earthquakes) or armed conflicts in the world. The main goal of this part is, among other things, to emphasize the advantage of GIS to work with current data compared to classic atlases, where the long-term situation for a certain year (often several years back) is recorded. Again, a short discussion follows, which often leads to other disciplines such as remote sensing.
3. **Future**: In the final part of the seminar, one of the goals is to show how geographic data make it possible to model processes related to climate change. An ideal case in this regard are individual climate models combined with data sets such as population distribution, distribution of glaciers or ocean currents.

Just from the description of the individual parts, it is evident that there is constant practice, and therefore also the strengthening of geographical concepts. Above all, it is about the concept of location, both absolute and relative. The perception of changeability and constancy of the location of places is an essential part of geographical thinking. Understanding this concept helps an individual to evaluate the location quality of a place and regions, to estimate how the location quality will change and what this means for the future. Development is the second key concept, which we strengthen thanks to time data and subsequent discussions. The student is thus looking for answers to the questions of what the cause of this condition and what consequences it is may have in the future. Finally, the concept of order is strongly reinforced when we start at the local level and finish with a view of the entire global world through the mezo-regional.

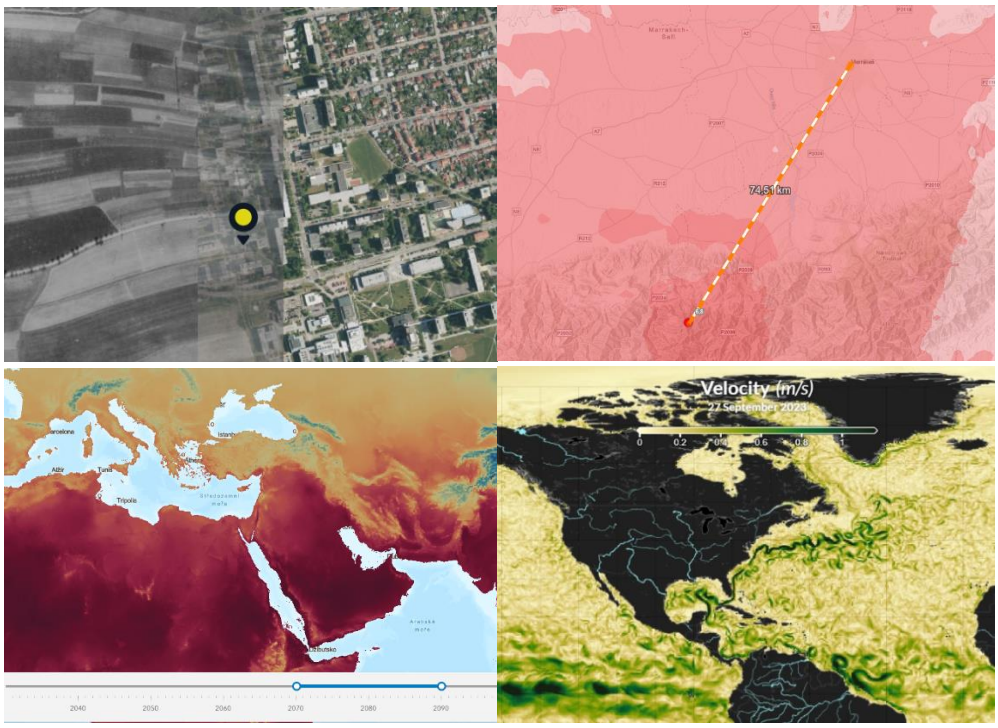

Figure 1. Samples of outputs from the workshop. From local to global – from historical to future.

DISCUSSION

Applied research is currently in the pilot phase. There is a lack of empirical verification of the results, such as value attitudes, etc. However, an unofficial evaluation confirms a stronger attachment to GIS and geography in general, both among primary and secondary school teachers and among students. We see this especially with newly entering students, where these seminars already took place in high school. Students usually have more knowledge about the meaning of GIS itself, as well as a stronger connection to geography itself.

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VIRTUAL VERSUS SCHOOL REALITY: A COMPARISON OF THE SOUTH BOHEMIA REGION AND UPPER AUSTRIA IN THE IMPLEMENTATION OF VIRTUAL REALITY

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ABSTRACT

Virtual reality is a well-known technology, but it is still a very new technology for the field of education and training. A number of studies have already been published on the integration of virtual reality into school settings. These are very often on a theoretical (experimental) basis and concern mainly higher education. We often do not know what the reality of using VR at primary and secondary schools is. This paper presents the output of a research project that mapped the real situation and compared the differences between the regions of Upper Austria and South Bohemia. Based on the results of monitoring of the situation, the implications in the form of suitable topics, approaches, and realistic possibilities for use in teaching in secondary as well as primary schools were then proposed and defined.

Keywords: Virtual reality, primary education, secondary education

INTRODUCTION

The ongoing development of technology brings great challenges to schools and educational institutions and requires the search for innovative concepts for the qualification of professionals. One possibility is the use of virtual or augmented reality (hereafter referred to as VR/AR) (Kavanagh et al., 2017; Al-Ansi et al., 2023). In the VReduNet project, four institutions from South Bohemia and Upper Austria joined together with the aim of building a network that deals with the use of AR/VR in business practice and in the educational system, defines new trends in this area and thus supports the introduction of these technologies in education and business. The project responds to the global trend of technological development, which presents significant challenges for the closely linked economic area. A strong potential for AR/VR development and programming among start-ups was identified in the program regions. On the part of these dynamically developing companies, the problem related to the lack of qualified employees in the use of these technologies is permanently highlighted, and the same problem can be identified in education, where there is a lack of enough teachers or qualified employees (Meccawy, 2023) who would pass on the necessary competencies to their students AR/VR, but at the same time they would provide the necessary collegial support to their colleagues to use modern technologies in their teaching.

The main goal of the project was to find out the current state of use of AR/VR in primary and secondary schools in both participating regions and to compare expert knowledge of the issue, examples of good practice, and to propose possible procedures for effectively implementing VR/AR into educational programs and company practice.

METHOD

The monitoring itself was carried out in several stages. The first was a comparative analysis in the field of primary and secondary education. A controlled interview (Lindlof & Taylor, 2002) was conducted with representatives of selected 40 schools in the Czech Republic and 40 schools in Austria. The average length of the interview was 35 minutes, and it was always conducted

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by the same person (a Czech researcher in the case of schools in South Bohemia, an Austrian researcher in the case of schools in Upper Austria) according to a uniform outline.

The second phase was a content analysis (Neuendorf, 2017) of the accreditation of educational programs preparing student teachers in both regions, including procedures, how changes in accreditation can be made and how complete accreditation processes are implemented and who is responsible for them. Again, the analysis was carried out by a team of researchers according to a uniform methodology.

FINDINGS

The interviews yielded fundamental findings about the level of use of VR/AR in schools in both regions, including specific limits that complicate their greater implementation. It was possible to classify these findings into thematically similar groups, to which we also attach recommendations on how to respond to the identified situation.

1. Teachers' motivation to use VR

A significant number of teachers do not want to research and learn with VR/AR because they are not properly motivated to do so. The analysis shows that this is mainly a question of awareness of this technology. Because teachers do not know how VR/AR can facilitate their teaching, it is difficult to motivate them to take trainings and courses in which they would be introduced to the benefits of using this technology. It follows from this information that it would be appropriate to familiarize teachers with the possibility of using VR/AR already during their studies at university, so that they come into practice familiar with this technology and know-how and what it can help them with. At the same time, they could pass on information to colleagues who are already working in schools.

2. Meaningful and practical use of VR in teaching

The analysis shows that there are teachers in schools who know VR/AR technology, would like to use it, have experience with it, but are not sure how and in which subjects to use it meaningfully. Thus, the question of purely practical use with specific teaching examples arises, i.e., Examples of good practice. From this, it can be concluded that it would be appropriate to show specific activities that the course participants will try from the students' point of view at the same time as the benefits. At the same time, it is a suitable approach to share the experiences of teachers with each other and thus provide collegial support, so that teachers can become aware of the possibilities of how to implement VR/AR in their own teaching.

3. Regular training and method updates

The third important point is the possibility of long-term and regular teacher training. Even if the university graduate will be introduced to the current possibilities and software for VR/AR, in a few years in practice, other new possibilities will be created, with which he will not have much opportunity to become familiar. For this reason, it would be appropriate to offer teachers regular training in current trends and innovations in VR/AR educational software. In the same way, this could work through greater connection and cooperation of companies that routinely use VR/AR in their activities and can thus show teachers which activities they can prepare their students for. Pupils then realize the importance of technology for their future career.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

From the regional and subsequent comparative analyses, it follows that the region of South Bohemia and Upper Austria has a high potential in the area of AR/VR, but at the same time it was possible to identify several limits. It can be concluded that schools understand that AR/VR is a new opportunity to develop the potential of the region and express interest in this technology. School representatives expressed interest in cooperation with companies and other entities that use this technology. Here, it was found that the same technology is mostly used, so cooperation should not be complicated. In addition to the lack of know-how, a significant obstacle in the greater deployment of AR/VR is the high financial requirements for the acquisition of technology, training of teachers, pupils, students, and workers. Using VR in regular teaching is quite difficult. It is particularly time-consuming, both during preparation and implementation. Before acquiring the technology itself, it is advisable to cooperate with the school, or A university that already has some experience and can provide consultations so that the school chooses an appropriate solution (in terms of initial investment, maintenance, usage options, used technology, etc.). It is necessary to realize that there will be other requirements at schools of a specific focus, for example secondary schools of a technical focus or art schools.

The path that can be taken in strengthening the know-how of schools and businesses can be seen in the fulfilment of the specific goal of the project – the creation of a pilot educational program that presents already available know-how, including examples of good practice.

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THE EFFECT OF TEACHING WITH MULTIPLE REPRESENTATIONS ON SCIENCE PRESERVICE TEACHERS' COGNITIVE STRUCTURES ABOUT ELECTROCHEMICAL BATTERIES

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Buse Gülay

ABSTRACT

This study aimed to examine the effect of teaching based on multiple representations on the cognitive structures of science teacher candidates on electrochemistry. For this purpose, quasi-experimental design with pretest-posttest control group research design was carried out. Teaching about electrochemical batteries was carried out in the General Chemistry III course. In the experimental group, lessons were carried out based on multiple representations, while in the control group, lessons were carried out with regular teaching. The research groups consist of 2nd grade science teacher candidates studying at Balıkesir University. A word association test was used to determine the cognitive structures of science teacher candidates regarding the subject. The word association test consists of 11 key concepts such as "oxidation, reduction, electron, electrode, salt bridge, anode, cathode, electrolysis, electrochemical battery, electric current, solution" and a sentence to be written about the concepts. In data analysis, frequency, and percentage tables showing the frequency of association of key concepts with other concepts were prepared, and concept networks were created. In addition, the sentences written by the students for the key concepts were categorized with a coding system developed by Ercan et al. (2010). As a result of the analyses, there was a significant increase in the number of concepts written by the experimental group students regarding the concepts of electron, electrode, salt bridge, electrolysis, electrochemical battery, and electric current, compared to the control group.

Keywords: Cognitive structure, electrochemical batterie, pre-service science teacher, chemical representation, redox reactions

INTRODUCTION

Chemistry is an inherently abstract branch of science (Taber, 2013), and so "understanding chemistry requires making sense of the invisible and untouchable" (Kozma & Russell, 1997). For this reason, teachers use representations in their lessons to teach chemistry. Chemical representations are used at three basic levels when explaining the chemistry concepts in the curriculum: macroscopic, submicroscopic, and symbolic (Johnstone, 1993). To develop a scientific understanding of chemistry, students can also use multiple representations. By relating the representations to each other, students can accurately make sense of what is going on at the particle and symbolic levels of a chemical event they observe.

One of the chemistry subjects where these representations are most used is electrochemistry. Students need help learning electrochemistry topics and may have many misconceptions (Garnett & Treagust, 1992). Teaching these topics using multiple representations can effectively prevent these misconceptions and improve students' cognitive structures. For this reason, the study aimed to determine the science teacher candidates' cognitive structures about concepts related to electrochemical batteries and how the cognitive structures of the experimental group students regarding these concepts changed after attending courses where teaching based on multiple representations was applied. In this study, answers to the following questions were sought in the study:

i. What are the cognitive structures of the experimental and control group students about concepts related to electrochemical batteries?

ii. How did the experimental group students' cognitive structures about electrochemical battery-related concepts change after they participated in courses where teaching based on multiple representations was implemented?

iii. What are the sentences made by the experimental group and control group students about the electrochemical battery?

iv. How did the sentences made by the experimental group students about the concepts related to the electrochemical battery change after participating in the courses where teaching based on multiple representations were applied?

METHODS

Research Design

The study was conducted in the 2021-2022 academic year with a pre-test-post-test quasi-experimental design with a control group (Yıldırım & Şimşek, 2016). Activities based on multiple representations for the Oxidation-Reduction Reactions unit were applied to the experimental group, and only content and outcomes related to the oxidation-reduction unit for the course were applied to the control group.

Participants

The research was conducted with 2nd-grade students of the Department of Science Teaching. The experimental group consisted of 17 students, and the control group consisted of 19 students. When determining the experimental and control groups, those with odd student numbers were randomly assigned to the experimental group and those with even numbers to the control group.

Data Collection

Word association test (WAT) and Conceptual understanding tests were used as data collection tools in the research. In this study, information about the word association test will be given as the findings regarding the word association test will be included. The key concepts in the test were prepared using the word association test developed by Karakoç (2003).

Teaching

The teaching lasted four weeks, and while computer animations with multiple representations and related laboratory activities were applied to the experimental group, the subject was explained using the teaching strategy through the traditional presentation to the control group.

Data Analysis

One of the methods used in data analysis is to determine the number of response words produced. For this reason, the number of response words that emerged for key concepts before and after teaching based on multiple representations was analyzed in tables. The evaluation did not include words considered irrelevant and unrelated to other words. Concept networks were created to learn students' cognitive structures about electrochemistry and how they change after teaching based on multiple representations. The concept network creation process used the response frequency map method (Nakiboğlu, 2008). The sentences in the word association test were analyzed with the coding system suggested by Ercan, Taşdere, and Ercan (2010). After

the analysis, sample sentences for each category are presented in a table. To ensure the reliability of the data analysis, two researchers who are experts in the field of key concepts and related sentences in the word association test were examined. As a result of the comparisons, the numbers of consensus and disagreement were determined. The reliability of the research was calculated according to the reliability formula of Miles and Huberman (1994), and the reliability of the study was determined to be 90%.

FINDINGS AND RESULTS

Compared to the control group, there was a significant increase in the number of concepts written by the experimental group students regarding the concepts of electron, electrode, salt bridge, electrolysis, electrochemical battery, and electric current. It is seen that there is an increase in the control group, especially in the concepts of oxidation and reduction, compared to the experimental group. When the sentence structures were analyzed, it was determined that while the students in the experimental group could not write almost any sentences in the pretest, at the end of the study, the number of sentences containing scientific information was the highest for all concepts.

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THE EFFECT OF TEACHERS' CHARACTERISTICS IN THE TEACHING PROCESS ON STUDENTS 21st CENTURY SKILLS: A REVIEW ON PISA 2018 RESULTS

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ABSTRACT

The main purpose of this study is to reveal the relationship between teachers' characteristics perceived by students in the teaching process and students' 21st century skills, using PISA 2018 Turkiye data. Structural equation modelling was used to determine the effect of perceived teacher characteristics on the identified skills. Perceived teacher characteristics in the research are teacher support, teacher enthusiasm, teacher giving feedback, teacher motivating the student, teacher's instructional guidance, and teacher encouraging reading, all of which were discussed. According to the research results, it has been determined that the perceived characteristics of teachers differ for each variable in terms of perceived cooperation, awareness in communication, classroom discipline and well-being, and which variables these are.

INTRODUCTION

It is seen in many studies in the literature that the qualifications of the teacher are important in achieving the targeted academic success. Teachers in the 21st century face some challenges. These areas of difficulty, which we can call a series of "innovations", can be an advantage for the teacher when analyzed well. Changes in basic issues such as the learning environment, students, teaching techniques, social life and business life are critical for the teacher. Each area of change has an informative and guiding feature about the skills that a teacher should have (Gümüş, 2019). In order to be successful in the changing global economy, 21st century skills have become increasingly important as more equipped human resources are needed to maintain the competitiveness of countries.

Today, 21st century learning skills have a vital function in education in order to stay in touch with international competition. The basic learning skills that students need to acquire are problem solving, active learning, communication, and cooperation, and learning to learn skills. The learning skills mentioned are important for acquiring 21st century skills (Louis, 2012). The skills that the 21st century learner should have, which Wagner (2008) classified as a result of his interviews with many senior managers, especially those operating in the economic field, are; practical intelligence and adaptability, being curious and imagination, communicating effectively verbally and in writing, systems and interpersonal cooperation and leadership, taking responsibility and entrepreneurship, critical thinking and problem solving, being able to access and analyze information.

Another organization working in this field is the American Association of School Librarians (AASL). AASL's studies reveal the skills and resource usage areas that the 21st century learner should have. These areas; it refers to personal and aesthetic development, critical thinking and acquiring knowledge, decision-making, research, adapting knowledge to new situations, democratic participation and respect for ethical values, determining results and creating new knowledge and sharing knowledge, and using skills and tools in line with their goals (AASL, 2010). 21st century student skills include all the skills necessary for a person to have a solution-

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oriented approach to the problems of the current period and to live a more qualified and qualified life.

Teachers' work is more complex than ever before, raising the question of how well teachers are prepared for these new contexts and new demands. Communication skills is a unifying force that brings all educational qualifications together (AES, 2019). Collaboration skills refer to the student working harmoniously and efficiently with others. Considering that the classroom is a learning environment and a place where students acquire the knowledge and skills to improve themselves, it becomes even more evident that the teacher's influence on the disciplinary environment in the classroom is important. The classroom disciplinary climate perceived by students varies depending on the classroom layout. It has been determined in many studies that the classroom disciplinary climate has an impact on the learning process and the teacher's feeling of competence (OECD, 2019). The change in expected skills over time has also changed the perspective on the acquisition and use of these skills. In this respect, teachers are expected to create the appropriate environments and learning processes necessary for students to acquire skills suitable for the 21st century. Based on PISA 2018 data, this study aimed to determine the effects of teachers on the variables of perceived cooperation, awareness in communication, classroom climate and well-being, which are expected from students.

METHOD

A screening (descriptive) model was used because it was aimed to examine the status of students' skill scores based on research application data and to reveal the current situation in its own conditions according to different variables. 6890 individuals from our country participated in the PISA application. In addition to cognitive questions regarding science, mathematics and reading skills, students are administered a comprehensive survey. The data was obtained from the OECD's official website with open access and the arrangement was made. In the analysis of the data, “sem”, “semPlot” “dplyr”, “lavaan”, “tuev” and “haven” packages were used in the open access R program version 4.1.2 (2023-07-03).

RESULTS

As a result of the analyses, it was found that among the teacher characteristics discussed on the students' perceived cooperation variable, the teacher's direction of instruction, teacher's support, teacher's interest, teacher's level of feedback and emotional support explained 9% of the variance in this variable. This shows that teacher characteristics are effective in the ability to collaborate, which constitutes an important part of 21st century skills. However, it was determined that the effect of teacher support on the dependent variable was not significant. In addition, among the teacher characteristics discussed on the students' perceived communication awareness variable, the teacher's direction of teaching, the teacher's interest, the teacher's level of feedback and emotional support explain 11% of the variance in this variable. It shows that teacher characteristics are effective in communication, which is among the 21st century skills. However, it was determined that the effect of teacher support and teacher feedback on the dependent variable was not significant. According to 2018 PISA data, it is seen that 13% of the variance in the disciplinary environment variable in the classroom is explained by teacher characteristics. It was determined that all teacher characteristics considered on the disciplinary

environment variable were significant predictors. Another finding is that, according to the data studied, 10% of the variance in the variable of students' well-being levels is explained by teacher characteristics. It was determined that all teacher characteristics considered on the well-being variable were significant predictors.

CONCLUSION AND RECOMMENDATIONS

The priority of institutions, organizations or programs that adopt 21st century skills; To fulfil the necessity of equipping all students with the knowledge, skills, work habits and character traits needed to continue their continuous education and challenging careers after graduation (Edglossary, 2016). Today, many studies have been conducted on the importance of these skills, which cover every aspect of education, and similar results have emerged (Wagner, 2008; Gelen, 2017; OECD, 2018; OECD, 2019). Similar results from our research are similar to studies in the literature. The fact that the variance explained by teacher characteristics is higher, especially in the dimensions of classroom climate and awareness in communication, shows that the teacher's level of influence is higher in these areas. The significant impact of teacher characteristics on the skills discussed can be presented as evidence that teachers play an important role in the acquisition of these skills. In this respect, it can be recommended that teachers be given training that will contribute to the acquisition of specified skills and that they develop processes that will support these skills during the teaching process.

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THE EFFECT OF MÖTEMM PROJECT APPLICATIONS ON TECHNOLOGY ACCEPTANCE AND USE OF MATHEMATICS TEACHERS AND TEACHERS' OPINIONS

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ABSTRACT

The aim of this study is to determine the effect of the project applications named "From Design to Education, From Mathematics to Engineering with Mathematics Teachers" (MÖTEMM) on the technology acceptance and usage levels of secondary school mathematics teachers and their opinions about the process. In the study based on mixed research design. The study group consisted of 25 Secondary mathematics teachers working in public schools in Konya province and determined by criterion sampling method from purposeful sampling methods. "Teacher Technology Acceptance and Use Scale" and an interview form developed to determine teachers' views on the process were used as data collection tools in the study. When the results obtained were examined, it was determined that the average scores of teachers' technology acceptance and use levels increased after the implementation, but this difference was not significant. When the opinions of the teachers were reviewed, it was determined that under the positive category, they stated that it was fun, educational, effective, interesting, an education that opens new horizons, a developer, a guide in the application of design-oriented thinking, an efficient education, as well as realizing that mathematics and engineering are intertwined, gaining awareness about STEAM, and being instructive about the active use of various programs in mathematics.

Keywords: Technology acceptance and use, secondary school mathematics teachers, opinion

INTRODUCTION

The rapid development of technology, the increase in applications for new approaches such as hybrid, distance, blended learning, and flipped learning to the teaching process with emergency distance education applications realized with the pandemic, and the need for trained individuals who have the characteristics of digital citizens with 21st century skills who can think interdisciplinary every day have increased the necessity of improving the knowledge and skills of teachers (Bozkurt, 2022; Türk, Çimen, 2022; Park, 2022; Sarıkoç & Ersoy, 2022) In this process, within the scope of TÜBİTAK 4004-Programs Mathematics Year Special Call, it is aimed to bring mathematical knowledge together with the society, to increase mathematical literacy, to carry out studies on innovative applications such as design-based thinking, game theory, robotics, mathematics software and to improve the understanding and awareness of the target audience by providing interaction. In this context, the project titled 'From Design to Education, From Mathematics to Engineering with Mathematics Teachers' (MÖTEMM) supported within the framework of the mentioned program was realized. The aim of the project is to enable mathematics teachers to experience how to provide their students with practical life skills by freeing them from theoretical knowledge. and to develop their competencies in this subject. In addition, realizing sample applications on how secondary school mathematics teachers can integrate the design thinking process in mathematics education through educational technologies, associate mathematics and engineering disciplines. Educational

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practices were carried out on how to apply innovative teaching and learning approaches in their lessons and integrate them with technologies such as geogebra, scratch, tinkercad. In this direction, the study sought to answer the problem of "whether there is an effect on the level of technology acceptance and use of secondary school mathematics teachers participating in MÖTEMM project applications and what are the opinions of teachers about project applications".

METHOD

In the study, which was based on a mixed research design, quantitative data were obtained with the scale data obtained before and after the application based on the pre-post test one-group weak experimental design model and qualitative data were obtained with semi-structured interviews. Qualitative data were collected through a semi-structured interview method for teachers' views on the project implementations. The study group consisted of 25 secondary school mathematics teachers working in public schools in Konya province and determined by criterion sampling method from purposive sampling methods The criteria were to have attended courses on basic technology education and STEAM education, and to have taken part in various projects and competitions. Teacher Technology Acceptance and Use Scale" (T-TASAS) and an interview form developed to determine teachers' views on the process were used as data collection tools. During the development of the interview form, an item pool was created that included questions about the evaluation of the activities, the process, and the project applications in terms of mathematics education. The related questions were organized in line with the opinions of two field education experts and a pre-test form was created. In the interviews conducted with a teacher who participated in the project applications but was not in the experimental group, no problems were identified in terms of the clarity and comprehensibility of the questions and the scale was finalized. For the data analysis, the normality of the data obtained from the T-TCTS was examined and the mean scores for the data determined to be non-normal ($p<.05$) were analyzed with the Wilcoxon signed-rank test. Teachers' views on the project were transcribed and subjected to content analysis by two researchers. It was determined that the agreement regarding codes and themes was 88%. The results obtained were supported with direct quotation sentences and explained descriptively.

RESULTS

Within the scope of the first problem of the research, when the Wilcoxon signed-rank test results of the pre and post-test scores obtained from the TSTAS applied to answer the question 'Is there a significant difference between the pre and post-test scores of the TSTAS applied before and after the 'From Design to Education, From Mathematics to Engineering with Mathematics Teachers' project applications, it was determined that there was no significant difference between the pre and post-test scores of the teachers participating in the applications from the Technology Acceptance and Use scale ($p>.05$; $X_{posttest}=3.98$ $X_{pretest}=3.69$). Secondly, at the end of the MÖTEMM project implementations, the results of the content analysis of the participants' opinions about the project revealed that there were 17 codes under the positive and negative categories. Under the positive category, it was determined that they stated that it was fun, educational, effective, interesting, an education that opens new horizons, a developmental education, useful, useful in learning new programs, advantage of working with teachers in their

field, guiding in the application of design-oriented thinking, an efficient education, as well as realizing that mathematics and engineering are intertwined, gaining awareness about STEAM, and being instructive about the active use of programs such as Scratch and Geogebra. Apart from this, it was also observed that there were negative opinions about the shortness or intensity of the trainings in the project.

DISCUSSION, CONCLUSIONS AND SUGGESTIONS

As a result of the research, it was seen that the teachers had positive opinions about the project implementations and gained awareness about using approaches such as design thinking STEAM in the mathematics teaching process and integrating them into the projects. The mean scores of the participants' acceptance and use of technology increased after the implementation, but this increase did not create a significant difference. This may be due to the fact that the teachers who were selected based on criterion sampling had previously attended various seminars and courses on technology use and integration. The study can be expanded to investigate design-based thinking and the applications that teachers can realize within this framework. The mathematics lesson, which is fundamental for many disciplines, has a structure that includes abstract information. Teachers working at the secondary school level, where algebra is taught for the first time, can be a source of innovative applications and development of students' skills through various projects, engineering applications that they will use in the design-based thinking process, or lessons that they will carry out by integrating various dynamic software and programs into the teaching process. For this reason, the related project implementations can be further expanded to reach more teachers and to improve the training according to teachers' experiences by strengthening them in terms of implementation.

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THE EFFECT OF GENDER ON TEACHER CANDIDATES' ATTITUDES TOWARDS DISTANCE EDUCATION: A META-ANALYSIS STUDY

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ABSTRACT

This study aimed to determine whether teacher candidates' attitude levels towards distance education processes differ according to gender. For this purpose, the meta-analysis method was used to determine the effects by combining the results of individual studies. In determining the studies to be included in the meta-analysis, theses and articles in the Higher Education Council National Thesis Center, Google Scholar and Ulakbim were examined between 2010 and 2023. 20 studies that fit the scope of the research and allow the calculation of impact values were identified and included in the research and analyses were carried out. According to the research results, although different results are presented in the literature, it has been determined that gender has little effect on teacher candidates' attitudes towards distance education.

Keywords: Teacher, distance education, gender, meta-analysis

INTRODUCTION

Distance Learning is a form of education that allows the student to increase their performance in the process of acquiring information, generally uses internet infrastructure and is carried out for the individual (Ülkü, 2018, p. 12). In recent years, interest in educational processes that centre on the individual has increased with the developments in technological, sociological, psychological and developmental theories. This increase has also changed individuals' orientation towards distance education over time. In addition to these developments, the virus epidemic that affected the world especially in 2020 has made it necessary to turn to distance education processes all over the world. Universities, on the other hand, have carried out their studies on distance education within their own technological infrastructure and the systems they use. (Yüceer, 2022; Özada, 2022). It can be said that especially among university students, mutual conversation and discussion in class will shed light on the future of the individual and is an effective and important criterion for their self-realization. It is known that face-to-face communication during distance education in higher education institutions is only possible through screens. Both closed resources within the university and online video conferencing applications and online live video education applications such as Google Meet, Google Hangout, Zoom, Cisco Webex, which universities can integrate themselves with, are used in this process (Yamamoto & Altun, 2020). In this respect, during the distance education process, teacher candidates' attitudes towards the education process are shaped and differentiated in line with their experiences. The possible effect of the gender factor, which is accepted as a source of innate variability, on prospective teachers in the distance education process is also the most examined variable in research. In the light of this information, it is seen that the attitude levels of teacher candidates towards distance education differ according to gender. Based on these studies, it was aimed to determine whether there are differences in the attitude levels of teacher candidates towards distance education according to gender.

METHOD

Meta-analysis is a statistical application used to combine and interpret the results obtained from individual studies (Glass, 1976, p. 4; Wolf, 1986, p. 10). Meta-analysis is an analysis that is

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carried out by taking into account the sample size of the effect sizes obtained from individual study results and allows the results of different studies to be presented by combining them (Schwarzer, Carpenter, & Rucker, 2015). In the study, meta-analysis method was used using individual research results. Meta-analysis is defined as systematically bringing together the statistical results of quantitative studies (Yıldırım & Şen, 2019, p. 4). Thanks to meta-analysis, applications can be made to compare different methods and as a result of these applications, it can be examined whether there is a significant difference between groups. After a point, what is more important than whether the application makes a meaningful difference is how effective this application is. The meta-analysis method provides information about this effect size. Within the scope of the research, when deciding which studies to include in the meta-analysis, theses and articles in the Higher Education Council National Thesis Center, Google Scholar and Ulakbim were examined between 2010 and 2023. In order to obtain the data, research was conducted with the expressions "distance education" and "teacher", and then studies containing the variable "gender" were included in the research. Within the scope of the research, information such as the sequence number of the individual study, the name of the study, the author, the year of publication, the sample numbers for the subgroups, the mean and standard deviation values of the subgroups were collected and coded. The study group of the research started with 41 studies conducted on distance education teachers in Turkiye between 2010 and 2023, but as a result of the examinations, 20 studies were determined to be suitable for meta-analysis.

RESULTS

When the studies included in the research were examined in terms of heterogeneity (Borenstein et al., 2009: 32), the Q (sd = 19) value was determined as 32.91 ($p < 0.05$). When this calculated value was examined according to the degrees of freedom in the Chi-square distribution table, it was determined to be higher than the calculated value. The fact that this calculated value is higher than the critical Chi-square value shows that the data included in the research are not homogeneous. Another method used to test homogeneity or heterogeneity is the calculation of the I2 value, and the value determined in this study is 52.7%. When this value is examined, it can be stated that the study shows heterogeneity. The reason for choosing the random effects model in this research is that it is assumed that the differences in attitude levels towards distance education determined in individual studies are different from sampling error. According to the random effects model, the average effect size was determined as 0.07. According to Cohen's (1988) classification, this value indicates a low effect size regarding the effect of gender on teachers' attitude levels towards distance education. The average effect size calculated in the research is expected to reflect the real effects in the studies. Publication bias provides information to the researcher about whether individual studies included in the study were selected biasedly. The absence of publication bias also allows obtaining information about the reliability of the study. For the current study, a funnel chart was drawn for the distributions of the calculated effect sizes to examine publication bias, and it was seen that the distributions of the effect sizes included in the study were symmetrical.

CONCLUSION AND RECOMMENDATIONS

The reason for using the random effects model is that the differences in the attitude levels of teacher candidates towards distance education reported in the individual studies included in the analysis are assumed to be different from sampling error. Otherwise, fixed effects model should be used by researchers. Some individual studies included in the study reveal the difference caused by gender (Yavuz, 2016; Korkmaz, 2021; Topal, 2022). According to the research results, in the examination of 20 individual studies, it was determined that gender had little effect on teacher candidates' attitudes towards distance education. When the literature was examined, it was determined that similar results emerged in many studies (Akkoloğlu, 2022; Uslu, 2022; Akarsu, 2023). According to the results of the research, it was determined that gender did not make a significant difference on the attitudes of teacher candidates towards distance education in Turkiye. Lack of differentiation according to gender is a desired feature.

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THE CONFLUENCE OF THE ART OF THINKING AND CREATIVE SKILLS: THE CONTRIBUTION OF POSTGRADUATE THESES İN THE FIELD OF PHILOSOPHY FOR CHILDREN TO 21st CENTURY COMPETENCIES

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ABSTRACT

This study aims to determine the adequacy of the variables used in the postgraduate thesis studies conducted in the field of philosophy for children (P4C) in Turkiye between 2008-2023 to meet the 21st century skills. The data obtained in this study, in which the survey model, one of the qualitative research methods, was adopted, were analysed using the content analysis technique. When the results of the research were examined, it was concluded that ten of the studies were at master's level and six of them were at doctoral level, when the distribution according to the main discipline was examined, it was concluded that (f=10) thesis studies carried out at the basic education level were completed in the classroom education programme and (f=6) thesis studies were completed in the pre-school education programme, P4C studies contributed positively to the development of 4C skills in individuals, especially on critical thinking skills, and P4C practices are a tool that can guide teachers in providing children with intellectual and social skills.

Keywords: Philosophy for children, 4C skills, critical thinking, 21st century skills

INTRODUCTION

Individual develops, society changes. In the current century, the expectation of the society from educators is to raise individuals who have the competences of this information age and can adapt to the new world order. In this information age, individuals who can produce solutions to real world problems by passing the acquired knowledge through the mental thinking process come to the fore and individuals with skill acquisition beyond knowledge acquisition attract more attention (Bektaş et al., 2019). In the 21st century, these skills are creative, critical and collaborative thinking and communication skills in the field of education. These skills are 4C skills. Ye and Xu (2023) stated that 4C skills are the four basic skills demanded from 21st century students for social development. It is stated that the desire to learn that emerges with the sense of curiosity in children, the realisation of the lack of knowledge, and philosophy for children (P4C) bring the philosopher and the child closer to each other (Akan, 2022). From this point of view, raising individuals with these intellectual competences is possible and meaningful in childhood.

P4C studies are practices that focus on some abstract and questionable themes with children, encourage children to think critically and question about the concepts addressed, and encourage creative, collaborative, and critical thinking without the need to make a judgement, thus requiring the individual to be active in the intellectual sense. This study aims to determine the adequacy of the variables used in the postgraduate studies conducted in the field of philosophy for children/philosophy with children in Turkiye between 2008-2023 to meet 21st century skills. The contributions of the applied studies carried out with primary school and preschool students studying at the basic education level in the process of gaining and developing 4C skills, which are 21st century learning and competence skills, the importance of P4C practices, their aims, teacher approaches, their relations, and reflections with other 21st century skills other than 4C skills were tried to be addressed within the scope of the study.

METHOD

In this study, in which the survey model, which is one of the qualitative research methods, was adopted, the data were obtained from the postgraduate theses completed between 2008 and 2023, which shaped philosophy for children's studies in basic education. Firstly, the keywords "philosophy for children", "philosophy with children" and "P4C" were searched from the electronic thesis archive of the Council of Higher Education to access the postgraduate thesis studies completed in Turkiye. Then, the thesis studies were carefully examined, and the postgraduate thesis studies completed in this field other than basic education were excluded from the scope of the research. The postgraduate thesis studies were analysed by content analysis method.

FINDINGS AND INTERPRETATION

When the postgraduate thesis studies carried out with students at the basic education level are examined, it is seen that ten of the studies are at the master's level and six of them are at the doctoral level, in the distribution according to the years of publication, especially in 2022, there is an increase in research on the subject, and when the distribution according to the main discipline is examined, it is seen that (f = 10) thesis studies, which constitute the majority of the thesis studies on philosophy for children carried out with students studying at the basic education level, were completed in the classroom education programme and (f = 6) thesis studies were completed in the preschool education programme. Thirteen of these studies are at master's and six of them are at doctoral level. In the studies conducted with primary school students, one of the participant groups was at the 2nd grade level, four were at the 3rd grade level, two were at the 4th grade level, two were at the 3rd and 4th grade levels, and one was at the 2nd and 4th grade levels. In the thesis studies conducted with preschool students, two of the participant groups consisted of 48–72 month-old children, three of 60-72 month-old children and one of 72 month-old children. Within the scope of the research, it is seen that the effect of postgraduate thesis studies on creative thinking, theory of mind development, social skills development, critical thinking level and problem-solving skills were investigated. In this direction, in students who participated in the philosophy for children application process; assertiveness, creativity, problem solving, effective communication, initiating and maintaining relationships, richness of imagination, developing multiple solutions, curiosity and questioning, establishing relationships between concepts, critical thinking, cooperation, decision making, abstract thinking, logical and emotional reasoning, understanding thinking errors, It is seen that skills such as gaining self-awareness and social awareness, organising and using information, taking risks come to the forefront, inferring the mental states of others regarding their wishes, thoughts, feelings and intentions, and predicting how people will behave are also improved.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

When the data obtained were analysed, it was concluded that P4C studies contributed positively to the development of 4C skills in individuals, were especially effective on critical thinking skills, and that P4C practices are a tool for teachers to guide children in gaining these intellectual and social skills. Some suggestions were made for researchers who will conduct studies on the subject. To summarise them briefly, it is suggested to carry out philosophy studies for children

using different techniques suitable for different age groups and educational levels, to diversify the materials to be used in this process, to plan content creation studies for philosophy/thinking skill clubs and training centres, to include it in the education programme as an elective course carried out in a planned manner in schools, and to provide facilitator (the person who leads the P4C session) and trainer trainings to teachers through in-service trainings.

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INVESTIGATION OF TEACHERS' LIFELONG LEARNING TENDENCIES IN TERMS OF DIFFERENT VARIABLES

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ABSTRACT

The main purpose of this study is to examine the lifelong learning tendencies of teachers working in primary and secondary schools in terms of some variables. As a result of the research, it was determined that teachers had moderate lifelong learning dispositions. Secondly, it was determined that teachers' lifelong learning dispositions changed significantly in terms of school level/type and seniority variables.

Keywords: Teacher, education, lifelong learning

INTRODUCTION

In the 21st century, individuals and societies need to be open to innovations, improve themselves and keep up with the age due to rapidly changing world conditions, technological advances, economic changes, etc. For this reason, individuals' need for education is increasing day by day, which changes the scope of the concept of education day by day (Tanili, 1996). Education is no longer only during the school years, but it gains a quality that starts from pre-school and continues throughout the life of the individual and individuals have to take responsibility for their own learning (Soran, Akkoyunlu & Kavak, 2006). Contemporary educational approaches emphasize the continuous change of knowledge, the fact that learning is not only in a certain period of life but also in an ongoing structure and continues throughout life and consider the ability to learn to learn to learn among the important features of the age. Considering that individuals begin to acquire lifelong learning skills from an early age by being guided in the right way, one of the most important roles in the process belongs to teachers. In order to provide students with lifelong learning skills, there is a need for teachers who have this skill, that is, who are both learners and pioneers of change. For this reason, lifelong learning; it is also seen as a necessity for teachers, who are both learners and pioneers of change, to constantly renew themselves. (Diker Coşkun, 2009; Diker Coşkun and Demirel, 2012; Şahan, 2020). In this study, the following questions were sought to be answered in order to examine teachers' lifelong learning tendencies in terms of some variables:

1.What are teachers' tendencies towards lifelong learning?

2. Do teachers' tendencies towards lifelong learning differ in terms of school type (primary, secondary school) and seniority variables?

METHODOLOGY

In the study, the general survey model was used to determine teachers' lifelong learning tendencies, and the causal comparison model was used to determine whether there is a difference in their levels according to the variables of occupational seniority (1-10 years seniority, 11-20 years seniority, 21 years, and above seniority) and school type (primary school, secondary school).

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The data of this survey-based study were obtained from 281 teachers working in the central Karesi and Altıeylül districts of Balıkesir province during the 2021 - 2022 academic years. The data were collected through the "Lifelong Learning Tendencies Scale" developed by Diker Coşkun (2009). CFA was conducted to determine the factor structures of the scale. In addition, descriptive statistics and Two-Way MANOVA were used to analyze the data.

FINDINGS AND DISCUSSION

The findings showed that, there were moderate lifelong learning tendencies, and the highest average was observed in the Motivation Tendency sub-dimension. It was determined that teachers' lifelong learning tendencies made a significant difference in terms of school type and occupational seniority variables. It was determined that teachers' lifelong learning tendencies made a significant difference in the sub-dimensions of Motivation Tendency, Persistence Tendency and Lack of Curiosity Tendency in terms of school type and occupational seniority variables.

RESULTS AND RECOMMENDATIONS

The results of the research showed that teachers' lifelong learning tendencies had the highest mean in the Motivation Tendency sub-dimension. Teachers' high motivation tendencies can be considered as a positive result in terms of teaching profession. When teachers' lifelong learning tendencies were examined in terms of school type and occupational seniority; a significant difference was found in the dimensions of Motivation Tendency, Persistence Tendency and Lack of Curiosity Tendency.

It was observed that the Motivation Tendency sub-dimension was in favour of teachers working in secondary schools with occupational seniority of 11-20 years. It can be said that this situation stems from the fact that the teachers working in secondary schools have free days due to being branch teachers and have the necessary time and rest to improve themselves. In addition, it is possible to say that the primary school teachers with occupational seniority of 21 years or more are more persevering. The fact that the age of the students that primary school teachers teach is younger than that of secondary school students and that they need to be more patient may have affected the character of primary school teachers and that being patient.

The new study to be designed can be repeated with a larger study group or by using various sampling methods and different independent variables (gender, age, school district (rural-urban), private or public school). In addition, the study was carried out with teachers from both primary and secondary schools. The studies to be designed can be repeated for teachers working at different levels of education.

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INVESTIGATION OF PRE-SERVICE PRIMARY SCHOOL TEACHERS' PEDAGOGICAL CONTENT KNOWLEDGE ON NUMBER SENSE

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ABSTRACT

This study aims to examine the pedagogical content knowledge of pre-service primary school teachers about number sense in terms of student understanding knowledge. The study was based on the case study model, one of the qualitative research methods. The study group consisted of 150 pre-service primary school teachers studying at the faculty of education of a university located in the west of Türkiye and determined by convenient sampling from non-random sampling methods. In the study, the data obtained were analyzed by content analysis. Consequently, it was determined that pre-service primary school teachers' pedagogical content knowledge was not sufficient in terms of their content knowledge and student comprehension knowledge about number sense.

Keywords: Number sense, pre-service primary school teachers, pedagogical content knowledge, mathematics education

INTRODUCTION

Number sense is an individual's ability to have a good knowledge of numbers, operations, and the relationships between them and to use this knowledge flexibly in numerical problems and daily problems involving numbers (Yang & Lin, 2015). In this study, five number sense components were taken as a basis by Yang & Lin (2015). In primary school mathematics curricula, the concept of number sense was not directly included, and the use of different strategies such as estimation, approximation, finding approximate values, place values, comparison, and rounding was emphasized. It is important that classroom teachers, who are the main source of the teaching process in this process, have content knowledge of the components of number sense and their knowledge of understanding students in the context of error. The knowledge of student understanding includes knowing students' errors and their sources, i.e. the student's thought structure, and the knowledge of teaching strategies includes knowing the methods and techniques used during teaching. Within this scope, this study aims to examine the pedagogical content knowledge (PCK) of pre-service primary school teachers about number sense in terms of student understanding knowledge. Study problems; "(1). How is the content knowledge of pre-service primary school teachers about number sense?, (2). How is the student understanding knowledge of pre-service primary school teachers about number sense?"

METHOD

The study was based on the case study, one of the qualitative research methods. A total of 150 pre-service primary school teachers studying at the faculty of education of a medium-sized university in western Turkiye constituted the study group. Participants were determined by the

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convenient sampling method, which is one of the non-random sampling methods. To determine the pedagogical content knowledge of pre-service teachers in terms of number sense content knowledge and student comprehension knowledge, Student Comprehension Knowledge Scale (SCK) was developed. The scale items include items that aim to measure the knowledge of the five number sense components identified by Yang & Lin (2015) (understanding the meaning of numbers and operations, recognizing number magnitude, using more than one representation of numbers and operations, recognizing the relative impact of operations on numbers, deciding whether computational results are reasonable), content knowledge and understanding the student in the context of error. Content analysis was used to evaluate the data obtained in the study. Coding of the obtained data was carried out by 2 science experts and 1 mathematics education field expert, and the code agreement was determined as 90%. According to the results obtained, content knowledge on understanding the meaning of numbers and operations in the scale, recognizing number magnitude, using more than one representation of numbers and operations, recognizing the relative impact of operations on numbers, and deciding whether computational results are reasonable.

RESULTS

The results obtained within the scope of the aim of the research regarding the question "How is the content knowledge of prospective primary school teachers about number sense?" are as follows. It was determined that 94.52% of the pre-service teachers gave correct answers and 2.74% gave incorrect or blank answers for the question given for the "understanding the meanings of numbers and operations" component of the scale. It was determined that 28.77% of the pre-service teachers answered the question correctly by using the features of understanding the basic meaning of numbers, base ten system, place value concepts, and number patterns, and 50.68% of them answered the question correctly based on the rule for the operation in the question, and 2% of them solved the question incorrectly by using the wrong rule. It was determined that 87.67% of the pre-service teachers gave correct answers, 8.21% gave incorrect answers, and 4.12% gave blank answers in the question given for the component of recognizing number magnitude (comparing two fractions). It was determined that the pre-service teachers who responded correctly performed denominator equalization, numerator equalization, according to the difference between the numerator and denominator, according to whole and half, converting to decimal, and comparing. When the responses to the question related to the component of using more than one representation of numbers and operations (using more than one way to represent a number) in the scale were examined, it was determined that 72.60% of the pre-service teachers explained the fraction using a model and 28.76% explained the fraction using a number line. It was also observed that there were pre-service teachers who used both types of models. Nevertheless, the rate of pre-service teachers who correctly indicated how many parts the whole would be divided into but incorrectly indicated how many parts would be selected or how many parts of the whole would be selected but incorrectly indicated how many parts the whole would be divided into was 4.10%. Besides, it was determined that 8.21% of the prospective teachers made mistakes in the division of the presented model into equal parts. Considering the explanations of the teachers, it was determined that they had misconceptions of part-whole (8.21%) and not being able to evaluate the number line as a part-whole (24.65%). It was determined that 71.23% of the pre-service

teachers gave correct answers, 20.55% gave incorrect answers, and 8.22% gave blank answers for the component "Recognizing the relative effect of operations on numbers" (Knowing how the four basic operations affect the results). Furthermore, considering the explanations made by the pre-service teachers, it is seen that (6.84%) division makes the number smaller, (1.36%) multiplication makes the number larger, (1.36%) subtraction makes the number smaller, and (9.58%) equal sign indicates the result. When the data of the fifth question regarding the step values for the component of deciding whether the computational results in the scale are reasonable (using estimation strategies or making mental calculations) and the answers to the sixth question were examined, it was determined that 83.56% of the pre-service teachers gave correct answers, 9.59% gave incorrect answers and 6.85% gave blank answers. Considering the data of Question 6, which contains a problem involving estimation skills for four operations, it was determined that 42.47% of the pre-service teachers gave correct answers, 47.94% gave incorrect answers, and 9.59% gave blank answers. According to the explanations of prospective teachers, 45.83% of them had misconceptions. To determine the student understanding knowledge of pre-service primary school teachers about number sense, cartoons were presented in the second sub-item of the problem related to each component presented to the pre-service teachers. These cartoons show primary school students' incorrect answers to the questions. The pre-service teachers were asked to identify the mistakes or misconceptions made by the characters and determine the reasons for them. It was determined that 61.64% of the prospective teachers identified the error partially correctly but could not explain the reason, and that 58.90% of them could not detect the error for the component of recognizing the number size, and that 52.05% of them could not detect the error for using more than one representation of numbers and operations, and that 64.38% could not detect the error for the component of recognizing the relative effect of operations on numbers, and that 50.68% of the pre-service teachers correctly identified the error and correctly explained the reason for the error in the fifth question about the number digits for the component of deciding whether the computational results are reasonable or not, and that 32.87% of the pre-service teachers identified the error partially correctly, but could not explain the reason for the error correctly for the sixth question, which included a problem involving estimation skills.

CONCLUSION - RECOMMENDATIONS

As a result of the study, the pre-service teachers were found to use rule-based strategies instead of number sense strategies, to have various misconceptions, and to lack sufficient content knowledge and student understanding. It was concluded that most of the pre-service teachers were inadequate in identifying the error or explaining its cause. In future studies, the development of pre-service teachers' PCK and examining it in terms of different components can be studied.

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FROM CLASSICAL ASSESSMENT TO FORMATIVE ASSESSMENT IN ACADEMIC EDUCATION

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ABSTRACT

Assessment is a necessary component of the entire process of teaching. Between the three components of teaching-learning-evaluation, a relationship of mutual interconditioning has been established, because each of the three is carried out in relation to each other. Formative assessment has a special meaning because it is carried out during the entire teaching process, having the role of systematically verifying the progress of the students. Formative assessment leads the entire teaching process by helping and contributing to the formation of skills by supporting and providing an exchange of opinions, ideas between teachers and students. Its role leads to an improvement and correction of the entire teaching-learning process in order to mitigate the problems encountered by students.

Keywords: Assessment, formative assessment, students

Assessment is presented as a complex action, representing a system of operations, values, skills, attitudes that are supposed to present information that needs to be evaluated, the purpose of the assessment, the period when the assessment is carried out, the way in which the assessment is carried out, what is the procedure for processing the information assessed and how it is used and last but not least, the basis on which criteria the evaluation process will be carried out.

Bocoș, M., defines assessment as "the complex action of collecting a sufficiently relevant, valid and reliable set of information relating to the learning and training activity, examining the adequacy of this set of information and a set of relevant criteria established in line with the training objectives, which were previously established" (Bocoș, 2013, p.111).

Assessment is the process of providing value judgments about the whole product and learning process based on certain pre-known qualitative principles in order to make certain decisions based on the meaning given to the evaluation process, be it of improvement, selection or confirmation.

Assessment is illustrated as the educational activity consisting of objectives, content with its own technologies which are oriented towards the appreciation, measurement, and decision-making regarding the formation of students based on certain educational requirements.

It is a known fact that student assessment is carried out by the university professor. This is the one who performs the assessment of knowledge, skills, values, skills through a filter of quality standards according to certain specific goals.at the same time, it is the professor who offers help if needed in filling the gaps observed in the evaluation process. The entire assessment process marks the results of the professor's assessment, and the success that is achieved will depend on the quality of the teaching.

Student assessment is one of the most significant components in the entire university education process. The results obtained by the students have an important role in obtaining and developing the values, competences, capacities, skills for a future career. It is essential that the assessment is carried out objectively taking into account the knowledge that is exist in the field in which

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the assessment is carried out. The assessment of students must be carried out through criteria and evaluation procedures that are to be known and clearly defined.

In university education, assessment is the central point of the whole process. This is the beginning of the educational process, the continuation and it is the one that provides a confirmation of the formation and appropriation of values, abilities, competences, behaviours, skills, and capabilities. The assessment process is designed to support the student's learning. Teaching and learning resources for the assessment process have to be created and expanded so that they support the student's learning. Teaching and learning resources should support students in understanding assessment strategies to enable them to confirm and use their skills, knowledge, and aptitudes. These resources should include information for students, information that stimulates them and leads them to develop their learning process outside the formal teaching framework. At the same time, if possible, it would be desirable for these resources to contain additional information that the student should use for future assessments. The role of the evaluation process is to support the student's learning.

In the educational process, the evaluation is the one that provides the necessary information to correct and improve the teaching activities from one level to another through an adaptation of the appropriate measures to the learning situations.There has been a number of changes the definition of formative evaluation in recent years, the opinions of researchers being varied, and this can be said to be happening today, formative evaluation being a subject open to changes.

Formative assessment is an assessment that aims to provide an essential evolution to every student who is engaged in the process of learning with the aim of changing or transforming the way and pace of this action to produce improvements. The main objective of the formative assessment is to describe as clearly as possible the values of a student. Formative evaluation is carried out during the course of the teaching act through periodic checks. It provides both teachers and students with information about the evolution recorded on the path toward the proposed goals. Formative assessment is primarily carried out through observations and questions addressed to students during the course of teaching or reviewing the content. If the information is concrete, the professor then identifies the improvements that he/she can make in the teaching process that will help the students optimize their learning. It can be applied to all subjects, and it can be integrated into all activities involving teaching and learning because the three components - teaching-learning-evaluation form a unitary whole. The formative assessment itself holds one of the main places in the contemporary pedagogical activity, we say this because it intervenes in the learning space with the major objective of supporting the student in the development of an autonomous learning.

Formative assessment involves collecting information during the semester and using that information for the purpose of frequently checking the quality of student purchases, discovering gaps or difficulties in the learning process. Scallon defines formative assessment as "a continuous process of assessment that aims to ensure the progress of people engaged in a learning or training process in two possible ways: either by making changes to the pedagogical situation or context, or by providing each individual with the necessary assistance for progress – in each case, to make the appropriate improvements or corrective measures, if necessary. The

decision to act, that is, the regulation, has as its object either the learning situation or the person himself/herself" (Scallon, 2000, p. 21).

Formative assessment is the process by which certain evidence of students' learning that was achieved by the evaluation process is observed. The evidence obtained through evaluation is used by teachers to improve their teaching process or by students to optimize their current learning strategies. Through formative assessment "the ability to listen, to put the actors of the educational process in the situation of receptivity is implicitly developed, and the practitioner of the formative evaluation is part of the systemic logic, where all the elements of the system are mobile, changing and leading, by training a formative education, to capitalize on the efficiency of the interactive dimension of the formative evaluation integrated in the learning strategies, two types of competences being formed: the competence of the professor and the competence of the student, which are mediated by the evaluating-(self)formative practices and, therefore, by the (self)evaluative-formative practices"(Roman, 2014, p. 29).

We will proceed by presenting the features of the formative assessment which openly illustrate its role and importance. Formative assessment is a "criterial assessment, based on learning objectives; it means that assessment is part of the normal educational process; student failures are considered moments in solving a problem and not as weaknesses in it; it intervenes during each learning task; it informs the student and the professor of the degree of mastery of the objectives; it allows the professor and the student to determine whether the latter possesses the necessary acquisitions to address the next task in a sequential assembly; it ensures an adjustment of the student's training processes in order to allow him/her to adapt the learning activities; it aims to guide the student to overcome the learning difficulties; it is part of the learning process, it is continuous, rather analytical and centred more on the learner than on the finished product"(Manolescu, 2010, pp.61-62).

Formative assessment certainly has an essential impact on cognitive acquisition. Formative evaluation calculates academic evolution and directly supports the achievement of the right results. The results will be measured according to certain indicators established beforehand that specify the quality of the educational product obtained at certain times of the teaching action. Formative assessment needs to meet a number of conditions such as: to be continuous, to be analytical and to be carried out in relation to the objectives of teaching and not in relation to the results of other students. Formative evaluation develops students' awareness of the process of their own formation.

In conclusion, we will say that formative assessment differs in its aims and objectives. An assessment is considered to be formative if the goals and objectives are aimed at following the students' learning path, discovering gaps and difficulties, and modifying learning situations before delivering some results.

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EXPLORING THE CULTURAL DIVERSITY AWARENESS OF PRE-SERVICE TEACHERS IN A MULTINATIONAL STUDY GROUP

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ABSTRACT

The present study focuses on exploring the cultural diversity awareness of pre-service teachers within a multinational study group comprising 40 participants from six European countries. These pre-service teachers engaged in a two-week intensive study program, fostering cultural diversity within multinational teams. Data collection involved demographic information and the Cultural Diversity Awareness Inventory (CDAI) developed by Henry (1995). The analysis of the collected data revealed valuable insights into the participants' cultural diversity awareness. While certain categories, such as "Multicultural Environment" and "Cross-Cultural Communication," received higher scores, the "Assessment" category exhibited more variability and relatively lower mean scores. Significant differences were found based on country and socioeconomic status (SES) variables, highlighting the influence of these factors on cultural diversity awareness. Notably, disparities between different countries significantly impacted the "Creating a Multicultural Environment Using Multicultural Methods and Materials" category. In conclusion, this study underscores the importance of tailoring cultural competency education to individual needs, taking into account the influence of country, SES, and prior experiences. These findings provide valuable insights into the strengths and areas for improvement in pre-service teachers' cultural diversity awareness, ultimately contributing to the development of a more inclusive and culturally sensitive educational environment.

Keywords: Cultural diversity, cultural diversity awareness, pre-service teachers, primary education, early childhood education, multicultural study group

INTRODUCTION

In a globalized world, teaching in culturally diverse classrooms has become a crucial skill for teachers across all subjects and grade levels. The ability to effectively teach students from diverse cultural backgrounds, traditions, customs, values, and perspectives requires teachers to have a deep understanding of cultural backgrounds and settings (Sezer & Kahraman, 2016; Sharma, 2007). Therefore, teachers' predispositions to cultural diversity have become an increasing concern for teacher education programs (Lim et al., 2008; Walker-Dalhouse, & Dalhouse, 2006; Wang et al., 2022). These programs play a crucial role as primary locations for educators to equip future teachers with the skills needed to effectively implement culturally responsive teaching practices with their students. Teacher education programs in various countries have different approaches to dealing with cultural diversity (Early & Winton, 2001). Hence, the levels of cultural diversity awareness among teachers with diverse nationalities and backgrounds differ in terms of context and past experiences (Wang et al., 2022), and this discrepancy could potentially become evident in their classroom interactions. The exploration of cultural diversity awareness among pre-service teachers represents a significant facet of teacher education that warrants deeper examination. Although there is existing research on this subject, there remains a need for more extensive studies that thoroughly investigate the impact of cultural diversity awareness on the instruction of culturally and linguistically diverse (CLD) students (Castro, 2010). The present study aims to explore the cultural diversity awareness of pre-service teachers in a multinational study group.

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METHOD

This study employs quantitative research method to explore the cultural diversity awareness of pre-service teachers in a multinational study group. The study group comprises 40 pre-service primary and preschool teachers from six distinct European countries. These pre-service teachers were brought together as part of an Erasmus project and took part in a two-week intensive study program. Pre-service teachers are able to participate in activities in multinational teams in a culturally diverse setting because to the nature of Erasmus intensive study programs. The data collection process occurred during this specific time frame. The study employed two main data collection tools: a demographic information questionnaire and the Cultural Diversity Awareness Inventory (CDAI) developed by Henry (1995).

Henry (1995) developed the CDAI (a= .90) as a means to assess individuals' cultural diversity awareness. The inventory consists of 28 questions in five sub-categories that aim to measure participants' knowledge, attitudes, and skills related to cultural diversity. By utilizing this inventory, the study seeks to explore the pre-service teachers' level of cultural diversity awareness. In addition to the CDAI, a demographic information questionnaire was administered to gather relevant background information about the participants. This questionnaire likely included items such as age, gender, nationality, the place where participant grow up, the SES level of family, field and degree of study and experience of teaching. By collecting this demographic information, the study aims to understand how these factors may influence the pre-service teachers' cultural diversity awareness. The study's data was examined utilizing the statistical application SPSS 22. The reliability (a) of the data obtained from the participants has been calculated as 0.67. Prior to beginning the data analysis, reverse and parallel items were recoded. After that, the normality distributions of the data were examined. It is calculated that the skewness and kurtosis vary between ±2 for CDAI (skew. = 0.212; kurt. = -.572). According to George and Mallery (2016), the assumption of normality is satisfied with a skewness and kurtosis range between ±2. So, during data analysis, parametric analyses were used. Frequency analysis, the t-test, and one-way ANOVA were used to examine the reciprocal relationships between variables. The link between subscales of CDAI scores was investigated using Pearson correlation analysis.

FINDINGS AND DISCUSSION

The participants in the study consisted of 39 females and a male. In terms of age groups, the majority fell within the 18-24 category, with 34 participants, while there were 3 participants in the 25-30 age range, and 3 more aged 31 and above. Socioeconomic status (SES) varied among the participants, with 3 categorized as low, 35 as middle, and 2 as high SES. Furthermore, the participants' backgrounds were diverse in terms of their upbringing environment, with 16 residing in urban areas, 19 in suburban areas, and 5 in rural settings. In terms of their educational backgrounds, 32 participants held bachelor's degrees, while 8 had master's degrees. Finally, when it came to their program of study, 24 were in primary education programs, and 16 were enrolled in early childhood education programs. Regarding field experience, 35 participants had previous experience, while 5 had none.

In order to explore the cultural diversity awareness of the participants, first their mean scores were calculated for every sub-category of CDAI (Table 1).

Table 1. Participants' mean scores and SD values in terms of sub-categories of CDAI

CDAI Sub-categories	Mean	SD
General Cultural Awareness	3.82	.063
Culturally Diverse Family	3.90	.059
Cross-Cultural Communication	3.89	.056
Assessment	3.12	.088
Multicultural Environment	4.11	.064

As presented in Table 1 participants had the highest scores in the "Multicultural Environment" and "Cross-Cultural Communication" categories. However, there is some variability in scores, especially in the "Assessment" category, where the mean score is comparatively lower. In a study conducted by Russell and Russell (2014), which involved students enrolled in secondary science education programs in the United States, it was also observed that the assessment sub-category received lower scores.

Table 2 provides a comparative view of cultural diversity awareness scores across different countries in the specified sub-categories.

Table 2. Cultural diversity awareness scores across different countries in the specified sub-categories.

	BE (N=5)		LT (N=7)		UK (N=8)		PT (N=7)		NL (N=7)		TK (N=6)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD	Mean	SD
General Cultural Awareness	3.72	.23	3.86	.22	3.94	.34	3.82	.34	3.85	.61	3.70	.58
Culturally Diverse Family	3.86	.20	4.10	.35	3.96	.43	4.05	.40	3.67	.28	3.69	.34
Cross-Cultural Communication	3.60	.28	4.03	.17	4.03	.47	3.84	.33	3.82	.28	3.96	.34
Assessment	3.07	.36	2.90	.57	3.67	.33	3.21	.71	3.00	.27	2.83	.62
Multicultural Environment	3.62	.30	4.16	.46	4.51	.31	4.24	.30	4.00	.27	4.02	.33

Table 2 highlights variations in cultural competence among these countries, with some showing higher mean scores in specific categories compared to others. The standard deviations indicate the extent of variability in each country's scores within each category.

In order to see if there are significant differences among various variables, ANOVA and t-tests were used. The analysis of the data yielded valuable insights into the cultural diversity awareness of participants both for total mean scores and across various sub-categories within the Cultural Diversity Awareness Inventory (CDAI). Total mean scores of participants yielded significant differences for country and SES variables. Notably, when examining the influence of different countries on these sub-categories, a significant effect was observed in "Creating a Multicultural Environment Using Multicultural Methods and Materials" [F (5,34) =4.57,

p=0.003]. Further investigations revealed that this distinction was primarily driven by differences between the BE-UK and BE-PT groups. In Wang et al.'s (2022) study, it was discovered that Taiwanese teacher candidates were more inclined to accept cultural experiences when they had prior experiences, whereas Russian teacher candidates treated all students equally. However, in the study conducted by Peköz and Gürşimşek (2020), there was no significant difference found based on the country variable when examining the attitudes towards multicultural education and cultural intelligence of preschool teachers. Moreover, the socioeconomic status (SES) of participants had a significant impact on their scores in the same sub-category [F (2,37) =4.01, p=0.026], with notable differences identified between the low (mean=4.70, SD=0.23) and middle (mean=4.07, SD=0.38) SES groups. However, no significant differences were observed in sub-categories when considering factors such as the place of upbringing, age, degree of study, program of study, or field experience.

CONCLUSION

Overall, the results of the present study provide insights into the pre-service teachers' strengths and areas where they may need further development in terms of cultural diversity awareness. The results suggested that students in a multicultural study group, who are in the pre-service phase, bring certain cultural attributes related to cultural diversity awareness with them. Furthermore, it was observed that some aspects of this sensitivity are directly associated with the ability to establish a multicultural environment using multicultural methods and materials. In addition, the findings offered valuable insights into the influence of country and SES on cultural diversity awareness, emphasizing the importance of considering these factors in cultural competency education and training programs.

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ANALYSING THE OPINIONS OF CLASSROOM TEACHERS ON THE CONTRIBUTION OF ETWINNING ACTIVITIES TO DIGITAL LITERACY SKILLS

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ABSTRACT

In the rapidly evolving educational environment, the integration of technology has become a cornerstone for preparing students with the skills necessary for success in the 21st century. In this context, eTwinning activities have emerged as a valuable platform for educators to collaborate, share best practices and participate in cross-border projects. The main purpose of this study is to collect information on the distribution of eTwinning processes to digital literacy presentation of the sections of the classes working in the province of Mersin and participating in eTwinning activities in the 2022-2023 academic year. Qualitative method was used in the research. The data of the research were collected by semi-interview using the interview formula solved by the researchers. It consists of 7 classroom teachers, including 1 coordinator, 1 district manager, 1 assistant principal. By content analysis of the obtained data. In the contracts made, it was stated that the eTwinning activity does not use Web 2.0 tools, does not comply with e-safety rules, and has developed digital literacy development with contributions in providing online communication and creating digital content.

Keywords: eTwinning, digital literacy, classroom teacher

INTRODUCTION

Rapid and continuous developments in the field of science and technology have necessitated rapid change all over the world in areas such as education, social life, politics, and the economy. These changes have also necessitated the renewal of education systems. It has become obligatory to renew education systems to improve individuals' professional and personal skills.

The use of information and communication technologies (ICT) in schools and classrooms will provide students with solid qualifications. In order to ensure that learning is qualified, it is very important and necessary for teachers to have ICT competencies that they will use in their professional practices. Teachers need to make use of ICT to guide their students in the development of skills such as critical thinking, problem-solving, and collaboration (UNESCO, 2018). Innovation and change studies to be carried out in every field of education will gain meaning thanks to teachers who are the practitioners of education. Therefore, highly qualified teachers should be trained to improve the quality of education.

eTwinning, an activity that enables the integration of digital technologies into educational processes, is an online platform funded by the European Commission for schools in Europe. eTwinning activities offer teachers and students the opportunity to actively use ICT in the educational process. The projects implemented also offer important opportunities to use digital technologies through online interviews and the use of Web 2.0 tools. Ethics and e-safety are very important in eTwinning activities.

According to the results of the "Household Information Technology Usage Survey" conducted by the Turkish Statistical Institute (TurkStat), the proportion of households with access to the Internet was 92.0% in 2021 and 94.1% in 2022. TurkStat data also show that there is an increase

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in the use of information technologies. Considering these increases, the importance of using these technologies effectively, efficiently, and safely, and thus the importance of being digitally literate, is increasing.

Using technology well is not enough to be digitally literate. Developing high-level thinking skills such as research, problem-solving, questioning, decision-making, and critical thinking is necessary to be digitally literate (Duran & Özen, 2018). In order to integrate information technologies into the learning environment, it is necessary to increase teachers' skills in recognizing digital education tools and creating content (Yamaç, 2018). eTwinning activity is important in teacher education as a pedagogical tool (Paz-Albo & López, 2017). eTwinning platform is one of the web spaces where teachers follow new technologies in education (Bal, 2019). Digital literacy levels of students, prospective teachers, and teachers are of great importance in order to make active use of technology and to use digital tools and equipment correctly and in the desired way (Cebeci, 2020).

METHOD

The qualitative method was used in the study and the data were analyzed by content analysis. Participants were selected according to the criterion sampling type, which is a purposive sampling method. The criteria were that the participants had participated in eTwinning projects and had received the National Quality Label or European Quality Label. A semi-structured interview form prepared by the researchers was used for data collection. While preparing the questions, the provincial coordinator, who is a senior teacher in eTwinning activities, and three field experts, including two academicians who carry out eTwinning activities with prospective primary school teachers in faculties of education, were consulted and a pilot application was carried out with two people.

FINDINGS

Participants, from digital technologies in the eTwinning process; stated that they benefited from the project for the purpose of preparation, implementation, and evaluation. Momentcam, Voila, Bitmoji, Avatoon, Dollyfy, Chatterpix, Chatterkid; poster-logo-banner-word cloud tools Canva, Postermywall, Wordart, Mentimeter, Wordmeeting; Photogrid, Incollage, Vivavideo, Inshoot, Piccollage, Kinemaster, Genially, Emaze; game tools Kahoot, Wordwall, Quizziz; digital book tools Joomag, Storyjumper, Bookcreater; survey tools Googleforms, Surveymonkey; They stated that they use Blogger and Weebly Web 2.0 tools from website-blog tools.

The participants stated that they prepared social media accounts such as Facebook, Twitter, Blogger, and Web site for their eTwinning projects, they used them for communication, cooperation project promotion and dissemination, and they paid attention to e-security rules. They stated that while sharing their eTwinning-related event products on the internet, they take precautions in terms of cyber security and copyrights, such as a secure platform, protecting personal data, using royalty-free content. They stated that eTwinning activities contributed to recognizing and using Web 2.0 tools, learning e-safety rules, developing online communication skills, and that they improved their digital literacy skills. They stated that they create various content such as posters, logos, word clouds, banners, videos, photo collages, animations, e-journals, e-books, e-exhibitions, digital games, surveys, and forms in their eTwinning projects.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

The eTwinning activity, which is open to all teachers and completely free of charge, is a platform that improves teachers' digital literacy skills and enables them to develop educational applications in accordance with the requirements of the 21st century. By taking part in eTwinning projects, teachers can follow the innovations in educational practices, cooperate with their colleagues and develop their effective communication skills. They can also follow pedagogical innovations through professional development courses. The suggestions below will shed light on other studies.

Student clubs can be formed in order to ensure that the use of Web 2.0 tools is not limited to projects and to increase students' ability to use Web 2.0 tools.

Interactive board, computer and internet support can be provided to schools in need to ensure that teachers and students have access to technological tools and digital content.

Teachers participating in eTwinning activities can be rewarded, such as service points and certificates of achievement, in order to encourage teachers' participation in eTwinning activities and increase their motivation.

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BEING A TEACHER IN THE 21st CENTURY: A JOURNEY FROM A CHANGING WORLD TO A CHANGING EDUCATIONAL APPROACH

Fatma Tezcan[1]

ABSTRACT

The developments in the field of information and communication technologies at the end of the second half of the 20th century paved the way for the 21st century. While internet technology enables the rapid dissemination of information, more information has been produced compared to previous centuries. Therefore, for all individuals in society, especially adults, the way to keep up with the changing world is through continuous learning. In this sense, it seems possible for adults to increase their knowledge and skills at individual and professional levels with effective adult education services. Being a teacher in the 21st century is possible by being an adult in the 21st century. In this study, it is aimed to discuss the phenomenon of being a teacher in the 21st century, in the context of the innovations that this century has brought to the concepts of education and teacher, and adult education. In the 21st century, teachers' being lifelong learners and information literate are among the basic qualifications for their guiding role in this century. On the other hand, teachers are expected to integrate 21st century skills into their curriculum and their own pedagogy and prepare their students for this century. At this point, the importance of qualified pre-service training and subsequent effective adult education services in developing teachers' knowledge, skills, and attitudes at both individual and professional levels in this century emerges. In order to respond to the challenges of the 21st century, teachers, in addition to demanding better professional training for themselves, must be curious individuals who are open to learning and innovation, and with these characteristics, they must be role models for their students.

Keywords: 21st century, adult education, lifelong learning, vocational education, teachers, teaching to learn

INTRODUCTION

In the 21st century, the inclusion of computers and the internet in life has directly affected the dissemination of information, and with the internet the world has turned into McLuhan's (2001) "global village". The point reached in information and communication technologies has made the function of adult education to help adults adapt to the changing world more visible. While the speed of production and dissemination of knowledge in this century brings lifelong learning to the fore, adult lifelong learners define the adult of this century. Being a teacher in the 21st century is linked to both individual and professional learning within adult education activities. For this reason, the way for teachers to adapt and keep up with change is through adult education activities.

The phenomenon of becoming a teacher in the 21st century can be approached from two main interconnected perspectives: teacher training and teacher self-education. In this study, it is aimed to discuss the phenomenon of being a teacher in the 21st century, in the context of the innovations that this century has brought to the concepts of education and teacher, and adult education.

TEACHING PROFESSION FROM PAST TO PRESENT

When the history of education in the world is examined, it is seen that the teacher has been a respected person since ancient societies (Sönmez, 2006). In the modern age, innovations emerged in education, as in many other fields. The humanist perspective that emerged during the Renaissance period was replaced by reason and scientific methods with the age of enlightenment (Güven, 2019). With the contemporary age, public education began, teaching

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became a profession, teacher training schools were opened, and teacher training models were developed. In Turkiye, with the declaration of the Republic, the education system was regulated, and importance was given to training teachers (Akyüz, 2019).

Critical education theory, which has its roots in the Frankfurt School, opened the role of the teacher to discussion by considering the concepts of education, school and teacher from a questioning perspective after World War II. Freire's (2014) definition of a teacher who learns together with his students in the learning environment, in a sense, defines the 21st century teacher. Zembat (2020) included the following among the qualities that a teacher should have in the 21st century: democratic, cultured, having values, interested in environmental problems, creative, able to solve problems, developing interdisciplinary relationships, teaching learning, open to innovations, curious about learning and research, entrepreneur, and leader.

BEING A TEACHER IN THE 21st CENTURY

In the 21st century, teachers' roles of guiding and teaching to learn require them to be knowledgeable and well-equipped individuals. Therefore, the importance of teachers being lifelong learners and information literate emerges. It is possible for teachers, who are the architects of the adult society of the future, to raise today's children and young people with the competencies required by the 21st century, by constantly renewing their knowledge and skills at individual and professional levels and by turning learning into a way of life. On the other hand, "the 21st century teachers need teaching skills content mastery as well as integrating teaching with technology" (Jan, 2017, p. 50).

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

While the 21st century requires lifelong learning and information literacy skills for adults, it has made the importance of continuous learning at the individual and professional level more evident. For teachers, it has become necessary to develop their professional skills in order to raise individuals with 21st century skills, and to adapt to the innovations that the 21st century has brought to education and training, and to integrate these innovations with their profession.

In this study, where being a teacher in the 21st century and the qualifications that teachers should have in this century are discussed, the suggestions are listed as follows:

Teachers should participate in programs for adults to improve their individual and professional skills, acquire new skills, and renew their professional knowledge by following the developments in their field.

In-service training programs should serve to both increase the quality of senior teachers and contribute to the continuous learning skills of young teachers.

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TEACHER TRAINING EXPERIENCE IN THE 100th YEAR OF THE REPUBLIC OF TÜRKİYE

Mubarakova Dilshoda Abduraxmatovna[1]

ABSTRACT

Every culture creates its own educational system. Education in every society is shaped according to the knowledge, experience and values existing in the culture of that society. In this sense, educational understanding and practices are specific to the culture in which they develop and are national. When looking for solutions to the problems of an education system, it is necessary to take into account the characteristics of the culture and society that created that system. However, humans are humans everywhere, their needs are universal, and they need education. A culture that does not have education and does not teach itself to its members cannot continue its existence. The education process has three basic elements that constantly interact. These three basic elements are student, teacher and program. The effectiveness and efficiency of an education system depends on the harmony of these three elements towards a certain goal. A malfunction, malfunction or malfunction that may occur in any of these elements disrupts the functionality of the entire system. It cannot be said that any of these elements is more important than the other. However, the teacher element requires careful attention. Because faculties of education, as institutions that train teachers, do not have any control over the students who are the input of the education system. In addition to teachers' pedagogical and field knowledge, their technological knowledge also needs to be improved. In other words, there should be teacher training focused on technological pedagogical content knowledge. In this study, which is a descriptive survey, the issue of teacher training in Turkiye has been examined, the problems of our current teacher training practices have been revealed and solution suggestions have been developed by looking at the teacher training process, which has become a problematic of our education system, in its historical development.

Keywords: Education system, functionality, culture, teaching, system

INTRODUCTION

In recent years, the country has paid special attention to a radical reform of the higher education system, ensuring transparency in the process of admitting students to study, improving the quality of training of highly qualified specialists, and the widespread introduction of digital and pedagogical technologies, as well as modern methods, into the educational process.

The point that almost everyone agrees on in the information age is the importance of liberated and empowered people. Today's teacher training challenges will be society's challenges tomorrow. The answer to the question "what kind of education" is hidden in the answer to the question "what kind of teacher".

Individuals who are creative, critical, thinking, questioning, researching, on the one hand, and on the other hand, learning to learn, structuring knowledge, mastering and using technology and being sensitive to society and their environment actually give clues about how education and therefore teacher training should be.

The issue of teacher training has always been one of the most current issues in Uzbekistan and Turkiye. In line with the problems experienced in the field of teacher training and the new models and developments that have emerged, new searches have been made in teacher education, and as a result, new regulations or structurings have been made. It can be said that these regulations are pedagogical, scientific, and rational decisions aimed at solving the problems experienced. Especially in recent years, there have been serious pedagogical and ethical developments in the training of teachers in the two countries. In this context, in this

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article it will be seen what methods have been followed in training teachers in Turkiye until today.

Today, Turkiye is a reliable long-term partner of Uzbekistan in political, trade-economic, investment, transport-communication, and other fields. The relations established between the states of the Uzbek and Turkish peoples are combined with centuries of common history, common language and religion, common values, and similar traditions. In this sense, it is important for us to study the experience of Turkiye. In particular, in accordance with the Concept for the development of the higher education system of the Republic of Uzbekistan until 2030, it is determined to meet the needs of the population and rapidly developing sectors of the economy by gradually increasing the level of youth enrolment in higher education to 50 percent and expanding the scale of quality higher education services in the regions. In recent years, Turkiye has significantly reformed its educational system. In the republic, educational institutions receive great support from the state, including private schools. The government of the country strives to create equal conditions for all children to develop their abilities. [5. 27]

The transition to new federal state educational standards has confronted universities with the problem of a new organization of the educational process, including for the training of teaching staff. Of particular importance are the requirements for the level of training of teachers capable of initiating the search for effective models for organizing and managing the educational and cognitive activities of students at school. The competitiveness and professional competence of graduates of pedagogical specialties is a requirement of the time. In the context of modernization of higher pedagogical education, the problem of improving teacher training arises.

Turkiye is among the countries with a deep-rooted tradition in terms of teacher training system. This experience, which started on March 16, 1848 and was transferred to the Republic administration with its structure shaped in the following years, was further enriched by placing education on a secular and scientific axis during the Republic period, and especially in the first years of the Republic, unique models were found that could serve as examples for other countries.

METHOD

This research is essentially a theoretical study based on literature review. It was carried out by scanning, interpreting, synthesizing, and presenting research and theoretical studies on teacher education in a system integrity. A literature review was conducted to collect data and the information obtained was interpreted.

FINDINGS

From this point of view, this study examines the issue of teacher training in Turkiye, especially the studies, developments and trends carried out by the Council of Higher Education, universities, and Faculties of Education on this subject in the quarter-century period after the task of teacher training was transferred to universities (Faculties of Education), based on documents. to submit for their evaluation. For this purpose, programs developed and implemented especially in the last quarter century, academic structure, quotas, number of students, graduates, teacher employment and Public Personnel Selection Examination (KPSS)

results of education faculty graduates and other relevant documents are presented in the appendices of the book for policy makers and researchers.

Teacher Training Practices in Turkiye

1. In the first years of the Republic, great importance was given to village education, and two village teacher schools with 3 years of education were opened in Kayseri and Denizli in the 1927-1928 academic year, with emphasis on training separate teachers for the village, whose living conditions were completely different from the city. The Village Institutes Law was enacted in 1940.

2. With the Basic Law on National Education No. 1739, enacted in 1973, the national education system was determined as a whole in terms of purpose, principle, structure, organization and operation, while compulsory education was increased to 8 years in the form of 5 + 3 under the name of Basic Education. With the same law, pre-service teacher education was raised from secondary education to higher education level with the provision that "It is essential to ensure that teacher candidates receive higher education, regardless of the level of education they are in."

3. Starting from the 1974-75 academic year, Primary Teacher Schools were named Teacher High Schools, while some primary teacher schools were transformed into two-year Education Institutes in order to train teachers for the 1st Level of basic education. Basic Education School II. Industrial Arts Higher Teacher Training School was opened in Ankara in 1975 in order to train teachers who would teach business technical, home economics, commerce and agriculture courses at the first level. With the Decree Law No. 41 issued in 1982, 2-year Education Institutes were transferred to universities under the name of Education High School [1. 187].

4. In the first years of the Republic, important efforts were made to train teachers for general and vocational secondary education institutions. While improvements were being made to the Higher Teacher Training School, the Gazi Education Institute (1926), the Girls' Technical Higher Teacher Training School (1934), and the Boys' Technical Higher Teacher Training School (1937), which continued their existence in the first fifteen years of the Republic and has continued to this day, were opened. While the number of Education Institutes increased over time, the Commerce and Tourism Higher Teacher Training School was opened in 1955 in order to train vocational course teachers for commerce high schools. These schools, which are affiliated with the Ministry of National Education, almost all of which are boarding schools, and which admit students by selecting them, were transferred to universities in 1982.

CONCLUSION AND RECOMMENDATIONS

When one hundred years of teacher training practices are evaluated, the following can be said:

1. Turkiye has a deep-rooted education tradition and a rich teacher training experience within this tradition.

2. It is seen that even at the beginning of the education reform studies, the place and importance of teachers in the education system was well understood, teacher training was planned very well, and practices that can be used even today were implemented, from the selection of teacher candidates to their training and appointment. In order to train teachers who undertake the sacred

duty of raising the generations that will protect the Republic and raise the society to the level of modern civilization, in the first years of the Republic, especially during the Atatürk period, while the legal foundations of the education system and teaching were being established, existing teacher schools were reformed and improved, and new ones were opened according to need.

3. These mentioned institutions continued their teacher training duties under the Ministry of National Education until 1982; Issues such as opening and closing these schools, appointing, and changing teachers and administrators, making and organizing educational programs, recruiting students, etc. are under the control of the Ministry of National Education [3.60].

4. In 1982, all teacher training institutions were transferred to universities, and our teacher training system gained an academic structure, status, and functioning. The diversity seen in every dimension of teacher training institutions before 1982 was put to an end, a minimum unity was achieved, and certain standards were introduced. While this new regulation provides integrity by including our teacher training system within an autonomous and academic structure, it aims to take these institutions out of the influence of politicians; It has also made positive developments in terms of having academic staff with academic careers and having the opportunity for specialization, research, and publication. While universities have gained a certain experience in training teachers in the period from 1982 to the present, important studies have been initiated especially in recent years to solve the problems, and since 1992, pre-school and classroom teachers have started to be trained in undergraduate programs in the Faculties of Education.

As a result of all this, it can be said that Turkiye's strengths in teacher training are:

1. Teacher training periods for pre-school and primary education should be four years, like other fields,

2. Conducting teacher training within universities,

3. Qualifications of faculty members,

4. Selection of teacher candidates (more homogeneous),

5. Having doctoral programs and research in the fields of teacher education and educational sciences.

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SOME METHODS USED IN TEACHING TURKISH AS A FOREIGN LANGUAGE IN UZVBEKISTAN

Mehriniso Kayumova[1]

Throughout the history of foreign language teaching, the question of how to teach a language has always been a controversial issue. Therefore, many different methods have been developed and used in different countries. The methodology of teaching a foreign language was developed in order to help the student achieve his educational goals in the fastest and most reliable way. The methods used in teaching a foreign language have generally appeared to overcome the shortcomings of the used method. These efforts serve not only to improve the quality of teaching foreign languages, but also to introduce new methods in this field.

The variety of methods used in teaching a foreign language, in turn, raises the question of which methods are more effective in language teaching. In order to effectively use these methods in the teaching process, it is necessary to know the characteristics and shortcomings of the methods well.

This study aims to provide information about some methods used by teachers teaching Turkish as a foreign language in Uzbekistan. One of the interactive methods that is the object of research, "case study" is one of the most common methods today. "Case-study" is an English word that means "case" - a specific situation, event, "study" means teaching. This method is a teaching method based on a concrete situation, event. "Case-study" is a teaching based on a problem-situational analysis of a specific real or artificially created situation, which is described in a case (story, event) and directs learners to express the problem and search for options for its appropriate solution. lim style. It should not be overlooked that the problematic story chosen as a case should have an educational value for the youth of our time, should serve to raise their morale, along with promoting actual problems.

"Case-teaching" consists of a set of optimal methods and tools arranged in an orderly manner, which provide guaranteed achievement of expected educational results in the process of implementing the educational goal and solving the practical problem situation described in the case. is an educational technology.

In our experience, conducting a lesson in the style of "Case-teaching" requires the teacher to provide the text of a problematic, effective (as much as possible), topical story, three sheets of A3 paper and markers. The method is implemented by dividing students into two or three small groups (of 4-5 people). The successful implementation of the style depends entirely on the case (story) chosen by the teacher.

We implement the "Case-teaching" method in Turkish language classes in three stages: the first stage, introducing the listeners to the case, identifying problems, information analysis covers 30% of the total time, the second stage - group work, problems, and their relevance. 50% of the

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total time is to determine the sequence, to develop alternative solutions, to determine the advantages and disadvantages of each solution, to evaluate alternative solutions. The third stage, which makes up 20% of the total time, includes the presentation of reports and presentations of group members. During the second stage, students express their opinions on A3 paper based on the following table:

Problem	Causes of the problem	Solution proposed by the author	Group solution

The most controversial and lively process is shown at the last stage. In this, the teacher discusses the solution options of the problematic situation presented by the students in a collective way, summarizes the presentations, evaluates the group work, and draws a conclusion. If the listeners could not find a complete solution to the problem, the teacher tries to find a solution with guiding questions.

In this study, examples of the use of this method in Turkish language classes with different approaches are given. This method, which increases students' interest in the lesson, ensures their cooperation and communication with the teacher, is mainly used in high-level Turkish language classes. The "case study" method improves not only students' speaking skills, but also their ability to solve various problems, freely defend their opinion, and criticize certain situations or events.

Keywords: Turkish language, foreign language, language teaching, method

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DEVELOPING 21ST CENTURY COMPETENCIES OF PROSPECTIVE MATHEMATICS TEACHERS FOR TEACHING STEM CONTEXTS: STEM FRAMEWORK

Hülya Gür[1]

ABSTRACT

In teaching 21st century competencies; Creativity, collaboration, communication and critical thinking are the basic components. Pre-service mathematics teachers who will educate future students also need to be ready for 21st century competencies. However, this issue has always been neglected until now. STEM education is included in the 2017 draft curriculum and the 2018 curriculum. However, teachers have insufficient knowledge about how to implement STEM and integrate it into their lessons. The aim of this research is to develop the 21st century competencies of prospective mathematics teachers; To enable them to prepare lesson plans appropriate to their stem disciplines, and to provide frameworks for integrated stem studies. A mixed design using both qualitative and quantitative research methods was used in the research. Video analysis, descriptive and content analysis were used to analyze qualitative data. In qualitative data analysis, data was analyzed through coding, sub-themes and themes. The sample of the research consisted of mathematics teacher candidates. For qualitative data, 8 students were interviewed through purposeful sampling. At the end of the research, it was seen that the teacher candidates prepared their own STEM plans, acquired 21st century skills, developed positive attitudes towards mathematics, prepared appropriate materials according to the subjects, worked in cooperation and carried out peer learning. At the end of the study, a sample stem framework was developed using the participants' data.

Keywords: STEM education, Mathematics teacher candidates, 21st century competencies, 21st century learning, STEMCrAfT framework.

INTRODUCTION

With the fourth industrial revolution, developments in technology have also caused changes in education and training. This interdisciplinary approach is crucial for addressing complex real-world problems that often require knowledge and skills from multiple fields. STEM education is recognized as a means of equipping individuals with the knowledge and skills necessary to build the foundation for leadership in scientific and technological fields. It prepares students to take on roles that drive innovation and economic growth in modern societies.. Also mathematics teachers play a role in developing students' ability to critically evaluate scientific information and make informed decisions about issues with scientific relevance. The aim of this research is to develop the 21st century competencies of prospective mathematics teachers. Mathematics is a foundational element of STEM, and mathematics teachers play a vital role in shaping the STEM education landscape.

A mixed design using both qualitative and quantitative research methods was used in the research (Yıldırım&Şimşek, 2013). Developed by Yılmaz and Alkış (2019), “21st Century Competencies Skills Scale”; “STEM Attitude Scale” developed by Özcan&Koca (2019); “semi-structured interview”; “video recordings” and “lesson plans and material” were used as data collection tools. In data analysis; for quantitative data obtained from the scale: descriptive statistics such as mean, standard deviation, percentage; t-test for unrelated samples will be used to compare paired groups. Video analysis, descriptive and content analysis were used to analyze qualitative data. In qualitative data analysis, data was analyzed through coding, sub-themes and themes. The sample of the research consisted of mathematics teacher candidates. For qualitative

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data, 8 students were interviewed through purposeful sampling. Reseach questions are follows: "What are the 21st century skills of prospective mathematics teachers?"; "What are the collaborative working habits of prospective mathematics teachers?"; "What are the communication skills of prospective mathematics teachers?"; "What are the critical thinking skills of prospective mathematics teachers?"; "What are the attitudes of mathematics teacher candidates towards STEM?"; "How do the stem lesson plans prepared by prospective mathematics teachers develop over time?"; "What are the characteristics of the materials created by prospective mathematics teachers for integrated stem studies?" This study focused on creating a stem framework that blended the findings as a result of qualitative and quantitative research questions.

FINDINGS

The answers received for each research question are given. Findings from research question of "What are the 21st century skills of prospective mathematics teachers?" Findings from research question of "What are the collaborative working habits of prospective mathematics teachers?" Collaborative working habits and the communication skills of prospective mathematics teachers are not sufficient. They tend to work alone. But their communication skills is much more better. Their critical thinking skills of prospective teacher had high critical thinking skills. Although the majority of the previous studies revealed that prospective teachers had high critical thinking skills (Sur, 2020; Karademir & Saracaloğlu, 2017), there are also other studies which concluded that they had moderately high critical thinking skills (Bölükbaşoğlu, 2021). Their attitudes of mathematics teacher candidates towards STEM had more positive. They had difficulty to prepare lesson plan at first but after that they had used to it. They had also prepared lesson plan and they prepared materials related to 5E plans. In this study, *the Stem Framework* created by blending the qualitative and quantitative findings of the research is included. The proposed stem framework was reached using the data obtained from the study is given below.

The STEM Framework

<table>
<tr><th>Science</th><th>Technology</th><th>Engineering</th><th>Mathematics</th></tr>
<tr><td colspan="4">STEM</td></tr>
<tr><td colspan="3">Context (curriculum)</td><td rowspan="3">Learning and Innovation Skills
(Cognitive skills; Process skills; Communication and Collaboration Skills)</td></tr>
<tr><td colspan="3">Planning (Critical thinking, connecting stem subjects)</td></tr>
<tr><td colspan="3">Preparation (5E Lesson Plans and Resources)
(Defining the problem- Description of the engineering design project and learning activities; connected prior knowledge and transfer their knowledge, Clarifying the problem: Prototyping and testing)</td></tr>
</table>

<table>
<tr><td>Implementation
(inquiry based learning-active learning)
(selection resources: online resources, manipulatives, software’s, video, you tube, …)</td><td rowspan="2">Life and Career Skills (Initiative and Self-Direction Skills; Attitude and Values Skills; Career-Related Skills)</td></tr>
<tr><td>Evaluating the implementation
– (Developing possible solutions-initial modelling (3D); Predicting analysis; Selecting best solutions: Modeling: Testing: Modifying: Optimization)</td></tr>
<tr><td>Resource usability & Support consideration
(materials, IT support)</td><td rowspan="2">Technological Skills (Technology Knowledge/Usage/ Production Skills)</td></tr>
<tr><td>Assessment Feedback (peer support)</td></tr>
</table>

RESULTS, DISCUSSIONS AND SUGGESTIONS

At the end of the research, it was seen that the teacher candidates prepared their own STEM plans, acquired 21st century skills, developed positive attitudes towards mathematics, prepared appropriate materials according to the subjects, worked in cooperation and carried out peer learning. In conclusion, the STEM framework aligns with the demands and opportunities of the 21st century. It equips individuals with the knowledge, skills, and mindset needed to thrive in a rapidly changing world, contribute to scientific and technological advancements, and address global challenges. STEM education is a valuable and forward-looking approach to learning, problem-solving and societal advancement in the 21st century, positioning individuals to make meaningful contributions to scientific and technological progress and to address the pressing challenges of our time.

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DETERMINATION OF ARGUMENTATION QUALITY OF SCIENCE TEACHER CANDIDATES IN THE CONTEXT OF THE HUMAN REPRODUCTIVE SYSTEM SUBJECT

Handan Ürek

ABSTRACT

This study aims to figure out the argumentation quality of teacher candidates with the help of various socio-scientific issues in the context of the human reproductive system subject. The study is believed to be significant in terms of presenting perspectives of young individuals about timely issues which influence several parts of society, and the findings are expected to provide sample materials to be included in science courses in terms of using argumentations. For this reason, a case study was conducted with the voluntary attendance of 24 science teacher candidates who were studying at a governmental university in Turkiye. Data was collected with the help of a questionnaire that involved five open-ended questions. The participants were asked to provide written arguments for each question in a one-course hour. Collected data was analyzed using content analysis and the framework introduced by Sadler and Fowler (2006). According to the results, teacher candidates' arguments dominated in justification with elaborated grounds for the second and fifth issues whereas justification with elaborated grounds and a counter-position level was observed in a higher percentage for the third and fourth issues. It is recommended to consider designing an appropriate instruction to help teacher candidates develop their argumentation quality about those socio-scientific issues in further studies.

Keywords: Arguments, socio-scientific issues, teacher candidates

INTRODUCTION

Some of the features expected to be gained by individuals with qualified science education can be listed as researching, questioning, reasoning, developing different perspectives, and decision-making. As a matter of fact, these features should be used to solve several problems in daily life. On the other hand, different opinions may emerge in society by not reaching a clear view on various subjects called socio-scientific issues and they require sufficient scientific knowledge to be solved. Examples of such issues are the construction of nuclear and hydroelectric power plants and space research. At this point, the argumentation process is important because it makes scientific thinking and reasoning visible in addition to engaging students with conceptual and epistemic targets (Duschl & Osborne, 2002). There are different models related to argumentation in science education. From these models, Toulmin's Argumentation Model includes elements such as data, claim, warrant, backings, qualifiers, and rebuttal (Toulmin, 2003). Students' argumentation quality can be determined with these elements.

Considering the mentioned above, this study aims to figure out the argumentation quality of science teacher candidates with the help of various socio-scientific issues in the context of the human reproductive system subject. The study is believed to be significant in terms of presenting young individuals' perspectives about timely issues and the findings are expected to provide sample materials to be included in science courses in terms of using argumentations.

METHOD

The study was conducted using qualitative approaches. Hence, a case study was conducted in line with the study's purpose. Twenty-four senior science teaching students who were studying at a governmental university in the western part of Turkiye attended the study. The purposive sampling method was utilized to determine the study sample. In this respect, all the participants were taking Human Anatomy and Physiology course and studied the human reproductive

system at the study time. Also, all the participants took Scientific Inquiry Skills course. So, they were expected to provide information-rich data for the study (Büyüköztürk et al., 2010).

The data of the study was collected with the help of a questionnaire that involved five open-ended questions. The questions were structured by the researcher as a result of the literature review. The questions focused on teacher candidates' support of testing for genetic diseases before marriage, sugar-loading tests during pregnancy, designer babies, surrogacy, and consanguineous marriages. The participants were asked to provide their written arguments for each question. Data collection elapsed one-course hour. Collected data was analyzed using content analysis and the framework introduced by Sadler and Fowler (2006). In this process, firstly, the distribution of the participants related to supporting these issues was determined. Next, their argumentation level was evaluated under "No Justification" (NJ), "Justification with no Grounds" (JwNG), "Justification with Simple Grounds" (JwSG), "Justification with Elaborated Grounds" (JwEG), and "Justification with Elaborated Grounds and a Counter-Position" (JwEG/CP) levels according to Sadler and Fowler (2006). Besides, examples from the participants' arguments were presented to support the findings.

FINDINGS AND INTERPRETATION

The findings obtained from the analysis of the first question showed that almost all the teacher candidates supported testing for genetic diseases before marriage (f=23). Their argumentation levels were mostly in equal proportions, JwSG (f=10) and JwEG (f=10).

The findings obtained from the analysis of the second question revealed that most of the teacher candidates supported sugar-loading tests during pregnancy (f=17). Four teacher candidates were found not to support this issue whereas three teacher candidates were undecided or partially supported. The argumentation levels were mostly in JwEG (f=10) and JwSG (f=8).

The findings obtained from the analysis of the third question indicated that most of the participants did not support designer babies (f=18). On the other hand, only two teacher candidates supported this issue. The argumentation levels of the participants were mostly in JwEG/CP (f=10) and JwEG (f=8).

The findings obtained from the analysis of the fourth question showed that half of the teacher candidates did not support surrogacy (f=12). Besides, nine teacher candidates were found to be undecided or partially supported. The argumentation levels of the participants were mostly in JwEG/CP (f=11) and JwEG (f=5).

The findings obtained from the analysis of the fifth question revealed that most of the teacher candidates did not support consanguineous marriages (f=22). On the other hand, two teacher candidates were determined to be undecided or partially supported this issue. The argumentation levels of the participants were mostly in JwEG (f=13) and JwEG/CP (f=7).

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

The present study revealed science teacher candidates' argumentation quality for different socio-scientific issues which can be considered in terms of the human reproductive system. Firstly, the argumentation levels of the participants for testing for genetic diseases before marriage were determined to be the highest and in equal proportions in JwSG and JwEG levels.

The argumentation quality of the participants can be concluded to be limited in terms of this issue. Also, the results of the study conducted by Özbuğutu (2022) showed that post-graduate science teachers did not mention this issue among various socio-scientific issues. Secondly, the proportion of the arguments in JwEG was determined to be the highest for the issues, of sugar-loading tests during pregnancy and consanguineous marriages. These results are in line with Isbilir et al.'s (2014) study considering genetically modified foods. On the other hand, the proportion of the arguments in JwEG/CP was specified to be the highest for designer babies and surrogacy. These findings imply that teacher candidates evaluate these issues from a broader perspective.

In the light of this study results, future studies might consider the development of teacher candidates' argumentation qualities on the issues addressed in this study through an instruction period. So, an appropriate teaching plan can be designed through further studies.

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INVESTIGATION OF THE 2018 SOCIAL STUDIES COURSE TEACHING PROGRAM IN TERMS OF 21ST CENTURY SKILLS AND TURKISH QUALIFICATIONS FRAMEWORK

Ahmet Çopur[1]
Hakan Önal[2]

ABSTRACT

The aim of the study is to classify the skills included in the 2018 Social Studies Curriculum (SBDÖP) according to the key competency areas in the Turkish Qualifications Framework (TQF). The research was conducted on the basis of document analysis, one of the qualitative research methods. The obtained documents were analyzed with descriptive analysis. According to the research results, it appears that the skills included in the SBDÖP are compatible with one or more of the key competencies. The skills are most related to Social and citizenship-related competencies (10), Mathematical competency and basic competencies in science and technology (6) and initiative-taking-entrepreneurship (4) competencies; It has been determined that no skills related to communication competence in foreign languages are directly included. Based on these findings, although the key competencies in the TQF are included in the perspective section of the curriculum of the 2018 SBDÖP and it is stated that the skills are determined within the framework of these competencies, it is recommended to include which skill is determined based on which competency area.

Keywords: competence, skills, social studies

INTRODUCTION

The main purpose of our education system is to raise individuals with knowledge, skills and behaviors equipped with our values and competencies in line with 21st Century skills. While teaching programs aim to provide knowledge, skills and behaviors, our values and competencies serve as the link and horizon that ensures the integrity between these knowledge, skills and behaviors (T.R. Ministry of National Education [MNE], 2018). Students at both national and international levels; Competencies, which are the range of skills they will need in their personal, social, academic and business lives, have been determined in the TQF. TQF consists of eight key competence areas: "communication in mother tongue, communication in foreign languages, mathematical competence and basic competences in science/technology, digital competence, learning to learn, social and civic competences, taking initiative and entrepreneurship, cultural awareness and expression". TYÇ in SBDÖP. There are 27 skills prepared in accordance with (MEB, 2018).

METHOD

The data of the study was obtained through document analysis, which is a qualitative data collection technique. Document review, defined as a series of operations that take place during the analysis and evaluation of electronic and/or printed materials (Bowen, 2009), includes the stages of researching, revealing, reading and evaluating sources for a certain purpose (Karasar, 2005).

In the study, data were collected through the "Social Studies Course Curriculum Skill Classification Chart" developed by the researchers. During the development phase of the chart, expert opinion was sought in terms of language and content. The form has been updated in light

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of the opinions obtained. Descriptive analysis was used as the analysis method in the research. Skills were determined as the unit of analysis. In this context, eight key competency areas determined in the TQF created themes.

FINDINGS AND COMMENT

By examining the suitability of the skills included in the 2018 social studies course curriculum with the competency areas in the Turkish Qualifications Framework, the suitability of the skills with the TQF was tried to be demonstrated. The findings obtained are given in Table 1 and interpreted subsequently.

Table 1. Compatibility of Skills with TQF

	Competency (Theme)	Skill
1	Communication in native language	Using Turkish correctly, beautifully and effectively Communication
2	Digital competence	Digital literacy Financial literacy
3	Taking initiative-Entrepreneurship	Entrepreneurship To decide Innovative thinking Research
4	Mathematical competence and core competencies in science and technology	Observation Using evidence Location analysis Problem solving
5	Mathematical competence and core competences in science and technology/Social and civic competences	Map literacy Perception of space
6	learning to learn	Drawing and interpreting tables, Graphs and diagrams Perceiving time and chronology Environmental literacy Perceiving change and continuity Critical thinking
7	Social and Citizenship competencies	Empathy Legal literacy Partnership Recognizing stereotypes and prejudice Self control Political literacy Social participation
8	Social and Civic competencies/Learning to learn/Cultural awareness and expression	Media literacy

According to the findings in Table 1, it is seen that the skills included in the social studies course curriculum are compatible with one or more of the key competencies. The skills are most related to Social and citizenship-related competencies (10), Mathematical competency and basic competencies in science and technology (6) and initiative-taking-entrepreneurship (4) competencies; It has been determined that no skills related to communication competence in foreign languages are directly included.

CONCLUSION AND RECOMMENDATIONS

According to the research results, it appears that the skills included in the social studies course curriculum are compatible with one or more of the key competencies. The skills are most related to Social and citizenship-related competencies (10), Mathematical competency and basic competencies in science and technology (6) and initiative-taking-entrepreneurship (4) competencies; It has been determined that no skills related to communication competence in foreign languages are directly included.

Based on these findings, although the key competencies in the TQF are included in the perspective section of the curriculum of the 2018 SBDÖP and it is stated that the skills are determined within the framework of these competencies, it is recommended to include which skill is determined based on which competency area.

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TEACHING APPROACH IN INSTRUCTING SPECIALIST SUBJECTS WITHIN THE DOMAIN OF TRANSLATION STUDIES: "TEXT TRANSLATION AND EDITING"

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ABSTRACT

This article focuses on the pedagogical approaches employed in teaching compulsory and optional courses pertaining to translation practice within the master's programs of "Comparative Linguistics, Linguistic Translation Studies" and "Synchronous Translation". The article dealt with the investigation of two subjects' teaching methods within the curriculum of the Department of Translation Studies and International Journalism at the Tashkent State University of Oriental Studies. Specifically, the compulsory subject "Text Translation and Editing" was examined, which has been a part of the curriculum for a duration of 7 years. This article provides an overview of the theoretical and practical aspects related to the organization of translation and editing instruction. Furthermore, this study examines the teaching approach employed in translation sessions and emphasizes the need to cultivate student evaluation standards. Based on pedagogical scholars' research and experiences it provides systematic recommendations. The study examined the incorporation of theoretical and practical instruction, efficacious modes of self-directed learning, and outcomes of the course. The research included descriptive and observational studies.

Keywords: translation studies, text translation, editing, media text, translator competence, teaching method, self-directed learning.

INTRODUCTION

The primary terminological framework of the field of study known as "Text Translation and Editing" is encompassed by the following:

Translated text. The text acquired subsequent to the process of translation.

Editing. To enhance the quality of a written piece, one must engage in the process of revising and correcting errors. The act of writing and creating.

Editor. An editor is a someone employed to revise and modify a specific text through a variety of methods, with the purpose of preparing it for publication in a reputable publishing house or other credible medium. 2. An individual responsible for overseeing many press groups.

Text. The text can be understood as a multifaceted entity comprising both form and content. Its capacity for effective communication extends beyond the mere sum of its constituent sentences. The translator must possess the capacity to discern the coherence of the source text and guarantee the entirety of the target text being produced.

V. Vinogradov posits the existence of six primary functional and stylistic classifications for writings. 1) Colloquial texts, namely colloquial-domestic and colloquial-formal, serve the purpose of facilitating communication and manifest in the medium of oral dialogue. and will be guided towards a designated channel of contact; The primary purpose of official papers, such as those pertaining to state affairs, politics, diplomacy, commerce, law, and related fields, is to convey a message. These documents are typically presented in written form and often adhere to specific guidelines and regulations, particularly in certain document categories. 3) Social-informative text encompasses a range of messages disseminated by mass media platforms such

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as newspapers, magazines, Internet resources, radio, and television. Its primary purpose is to shape public opinion by conveying information. 4) In scientific discourse, it is customary to prioritize a coherent, objective, and rational articulation of the purpose and substance of the message. 5) In the realm of artistic expression, encompassing fiction, literary criticism, and journalism, the interplay of text creation assumes a synthesized form and assumes an additional aesthetic function. Religious texts encompass a wide range of sacred literature, including holy books, narratives about revered saints and prophets, and sermons delivered within religious contexts.

Within the realm of translation theory, A. Fyodorov presents a typology of texts that encompasses many categories. These categories include newspaper-informational and special scientific texts, socio-political and journalistic materials, as well as speeches, and artistic texts.

METHOD

The curriculum primarily comprises practical exercises, typically involving one text per two-hour session. These exercises involve translating passages from Chinese to the students' native language or vice versa. Additionally, students are provided with texts accompanied by translations or analysis, which they are expected to edit or interpret. Longer texts are assigned over multiple lessons.

RESULTS AND DISCUSSION

The knowledge, abilities, and qualifications of master's students in the field of "Text translation and editing" are subject to the following standards. The curriculum for graduate students encompasses the examination of the structure and composition of artistic, scientific, and journalistic texts over the course of three semesters. This includes a comprehensive exploration of various aspects of artistic, scientific, and journalistic styles, as well as the theoretical and methodological foundations underlying the process of working on these texts. Additionally, students will gain insight into editorial activity and the associated editorial rights, developing an understanding of text editing and the identification of different types of errors. The technique of translating artistic, scientific, and journalistic texts will also be covered, along with a focus on the specific features of editorial analysis and the rationale behind the editing process. Acquire proficiency in the assessment criteria of editing and develop the capacity to differentiate texts based on their respective genres. Examining and contrasting translated texts; The process of translating from an Eastern language into a Western language, and vice versa. Revise the translated text by enhancing its lexicon, refining syntactic constructs, and possessing the necessary skills to rectify any semantic problems.

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IMPROVING THE QUALIFICATIONS OF TEACHERS IN THE FIELD OF EDUCATION

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ABSTRACT

The process of teaching foreign languages consists of many components, with the inviolability of its fundamental foundations, approaches and principles, there are also variable components that require periodic updating. First of all, this is due to the changing living conditions under the influence of technical progress and, accordingly, with the specificity of perception and memorization of each new generation of students who come to universities. The change in the composition of skills and abilities acquired in secondary school, the ways of perceiving and processing information, the modification of the mechanisms of memorization and the formation of long-term memory cannot be overlooked by the teacher of a foreign language, who at a humanitarian university spends more time with students in the classroom than others, and due to smaller groups, it is in closer personal contact with trainees. Nowadays the process of teaching is filled with opportunities and challenges, but also with changes. The issue to be a teacher is changing and being English as a Second Language (ESL) teacher involves and demands new teaching strategies, methods, new attitudes, activities, and perspectives for the classroom.

Keywords: Teacher-student relationships, key to positive or negative motivations, deep effect on someone's lifestyle, strategies, methods, new attitudes, activities, and perspectives

INTRODUCTION

The last four year (2017-2020) became a period of sweeping reforms and important decisions aimed at improving quality of higher education that resulted in multi-fold increase of the relevance thereof as well as the important role played by intensively developing international cooperation. The Concept of Higher Education Development in Uzbekistan by 2030 adopted on 8 October 2019 describes the strategy of the HE development and clarified the main goals of the HEIs. Two new Law on Education and Law on Science have been adopted in 2020. The new Law of the Republic of Uzbekistan on Education adopted in 2020 introduced for the first time the concept of inclusive education, considered dual education with work placement and distance education as one of the forms of education implemented through ICT and Internet. One of the strategic development goals of the country's HE system is enhancing quality of training of creative and systemically thinking professionals, strengthening attractiveness of higher education system for investments, introducing the "University 3.0" concept that calls for close integration of education, research and innovation. The work aimed at expanding coverage of youth with higher education continued throughout 2020 through rapid growth in the number of new higher education institutions in the country and establishment of campuses by the world's leading universities. The number of HEIs has reached 129 today as opposed to just 60 in 2017. In the last four years, 52 new HEIs were established in the country including 25 branches of foreign universities and 9 non-state universities. The government has decided to increase the list of universities, which is going to get financial and content related autonomy, including decisions regarding students' admission, structural changes and introduction of new programmers/courses. Governmental decree No 402 from 23 June 2020 "On the approval of the regulations on the procedure of recommending women to participate in the competition and

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organization of their admission to higher educational institutions within the entry indicators based on additional state grants" considers ensuring gender-balance at higher education institutions. With this decree the government provided additional grants for women to study at HEIs. Pursuant to the Cabinet of Ministers' Resolution No 824 dated 31/12/2020 "On measures to improve organization of education process in higher education institutions", education process in HEIs will gradually undergo transition to credit-module system starting 2020/2021 academic year. The document has approved the Regulation on introduction of credit-module system based on European Credit Transfer and Accumulation System - ECTS in the education processes of higher education institutions of Uzbekistan. Teaching nowadays is filled with challenges and opportunities, but also with changes. Teacher-student relationships can be the key to whether positive or negative motivations exist in students' attitude toward learning, and relationships can have a deep effect on someone's lifestyle. Therefore, a clear understanding of the peculiarities of a student's thinking is very important for the successful work of a foreign language teacher. Due to this, the questions of the characteristics of generations, the specifics of thinking are of concern not only to scientists engaged in psycholinguistics, but also to practical teachers who are looking for answers to the current challenges they face daily in the classroom. The solution of urgent problems of teaching a foreign language in a humanitarian university is impossible without a clear understanding of the characteristics of the modern generation that has formed in the era of information technology. According to the theory of generations, developed by American scientists Neil Howe and William Strauss in 1991 and adapted to the conditions of Russia at the beginning of the 21st century by a group of scientists led by Evgenia Shamis, generation Y or the Millennium comes to our universities, possessing "clip thinking", which is characterized by the absence of independence, confidence in their own value, disbelief in the distant future. Literature review. Weber, Martin & Cayanus, 2005 (Mazer, at al., 2013, p.255), found that When students consider their classroom work to be meaningful, have the opportunity to demonstrate their competence, and believe their input is vital to the course, they are motivated to communicate with their instructors for relational, functional, and participatory reasons. Interested and involved students learn better. "Students with high interest perceive a content area to be important, are active and involved in the subject, and feel knowledgeable in the subject matter" (Mitchell, 1993; Tobias, 1994). According to Krapp, Hidi, and Renninger (1992) (cited by Joseph P. Mazer, 2013, p. 256) "Interest is often triggered in the moment by certain environmental factors (e.g., teacher behavior) and can be characterized from the perspective of the cause (the conditions that induce interest) or from the standpoint of the person who is interested." Mazer (2012) notes «Students who experience heightened emotional interest are pulled toward a content area because they are energized, excited, and emotionally engaged by the material" (p.99). Itis crucial to be inserted in a safe environment where students can feel engaged and motivated to learn, share their experiences, and demonstrate their competence [da Luz, Fredson Soares dos Reis. (2015). The Relationship between Teachers and Students in the Classroom: Communicative Language Teaching Approach and Cooperative Learning Strategy to Improve Learning. In BSU Master's Theses and Projects. Item 22. Available at http://vc.bridgew.edu/theses/22].

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THE RELATIONSHIP BETWEEN TEACHERS' SELF-EFFICACY TOWARDS TECHNOLOGY INTEGRATION AND SCHOOL HAPPINESS

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ABSTRACT

The purpose of this study is to determine the relationship between teachers' self-efficacy towards technology integration and their school happiness. Relational survey model was used in the study. The sample of the study consists of 267 teachers working in Balıkesir. "Self-Efficacy Perception Scale for Technology Integration" developed by Wang, Ertmer, and Newby (2004) and adapted into Turkish by Ünal (2013) and "School Happiness Scale" developed by Sezer and Can (2019) were used as data collection tools. The data were analyzed using T-test, One-Way Analysis of Variance (ANOVA) and Pearson Moment Two-Way Correlation Analysis. According to the research findings, it was concluded that teachers' self-efficacy belief levels towards technology integration and their perceptions of school happiness were high. It was concluded that there was no significant difference between gender, educational status and professional seniority variables and self-efficacy for technology integration. It was concluded that there was a significant difference between teachers' perceptions of school happiness and gender in favor of male teachers, while there was no significant difference between educational status and professional seniority variables. As a final result, it was revealed that there is a positive, reasonable and significant relationship between teachers' perceptions of school happiness.

Keyword: Technology integration, self-efficacy, school happiness

INTRODUCTION

Education stands as an investment in the future of society, with schools serving as pivotal environments for nurturing this investment. Teachers, often referred to as community architects (Gündüz, 2012), are integral to this process. A fundamental skill that educators, holding such a paramount role, must possess is the capability to harness both students' potential and financial resources in alignment with their classroom objectives. Among the essential skills, technology proficiency is paramount, especially in our current digital age, where the integration of technology in education is of utmost importance. Additionally, the contentment of teachers within their educational institutions is a key element in fostering successful learning. Consequently, it is postulated that both self-efficacy in technology integration and school happiness are critical factors for educators and may influence one another. A review of the existing literature reveals a scarcity of studies exploring the nexus between teachers' self-efficacy in technology integration and their overall satisfaction within the school environment. Therefore, the principal aim of this research is to discern the correlation between teachers' self-efficacy in technology integration and their sense of well-being in the school setting.

METHOD

This research employed a screening model to investigate the correlation between teachers' self-efficacy in technology integration and their overall job satisfaction within the school environment. The study utilized a quantitative relational design to gather and analyze data. To explore the connection between teachers' confidence in integrating technology and their overall well-being in secondary educational settings, this study utilized the "Self-Efficacy Perception of Technology Integration Scale." This assessment tool, originally devised by Wang, Ertmer, and Newby (2004), was adapted to Turkish by Ünal (2013). Furthermore, the "School

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Happiness Scale," designed by Sezer and Can (2019), was employed to gauge teachers' levels of satisfaction within the school environment.

FINDINGS AND INTERPRETATION

In the light of the research findings, it becomes evident that the participants have demonstrated a notable proficiency in both school satisfaction and self-efficacy regarding technology integration. These findings substantiate prior research endeavours examining teachers' self-efficacy concerning their contentment in the educational environment (Özgenel & Bozkurt, 2020) and their competence in incorporating technology within pedagogy (Sezer, Şanlı, Pınar, & Kara, 2022). Additionally, a significant observation arises concerning pre-service teachers who exhibit a substantial degree of self-efficacy when it comes to the integration of technology into teaching practices (Keser, Yılmaz, & Yilmaz, 2015). This discernible trend can be attributed to the prevalent utilization and evolution of technology in recent years, contributing to the heightened technological self-efficacy observed among both seasoned educators and aspiring teachers.

With regards to gender, the research findings indicate a notable absence of substantial disparities in teachers' perceptions of self-efficacy in technology integration. This conclusion is consistent with the body of literature, encompassing studies such as those conducted by Baker, Al-Gahtani, & Hubona (2007), Bangun et al. (2021), Gerçek, Köseoğlu, Yılmaz, & Soran (2006), Gorder (2008). However, it is essential to acknowledge that select studies have reported instances where either male teachers (Dikmen & Demirer, 2016) or female teachers (Turgut & Başarmak, 2019) displayed elevated levels of self-efficacy concerning technology integration. Nevertheless, in a broader context, it can be inferred that gender does not exert a significant influence on self-efficacy in the domain of technology integration, as educators collectively demonstrate a propensity to stay attuned to technological advancements and exhibit openness to innovation.

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

Upon analyzing the data concerning the correlation between teachers' self-efficacy in technology integration and their levels of school satisfaction, it was deduced that a positive and moderately strong relationship exists between self-efficacy in technology integration and school happiness. Bangun et al. (2021) affirmed in their study that harbouring a positive disposition toward technology significantly enhances instructors' overall happiness. It is well-established that content and satisfied employees tend to exhibit heightened motivation and productivity in the workplace, as emphasized by Aziz, Mustaffa, Samah, and Yusof (2014). Therefore, it is reasonable to surmise that the augmentation of teachers' self-efficacy in technology integration contributes to an elevation in their perceived school happiness. In essence, educators with a heightened sense of school satisfaction are more at ease and self-assured when incorporating technology into the learning environment.

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COMPARISON OF PRESCHOOL TEACHER TRAINING PROGRAMS IN TURKİYE AND KAZAKHSTAN

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ABSTRACT

The purpose of this research was to examine the preschool education programs of Turkiye and Kazakhstan. In this study the document analysis method, one of the qualitative research methods was used. While obtaining data about Türkiye, the websites of the Council of Higher Education and Balıkesir University were used as sources, while obtaining data about Kazakhstan, the website of Kazakh National Girls Pedagogical University was used as a source during the document analysis. In the light of the data collected from these sources, it has been determined that there were some similarities between the programs implemented in Turkiye and Kazakhstan in terms of preschool teacher training programs.

Keywords: Preschool teacher training program, preschool teacher, comparative education

INTRODUCTION

Preschool education is the first of the important steps in a child's life. The child steps into the formal education process with pre-school education. At the same time, this period is a period in which the child's development is very rapid. School is the first social environment a child encounters after his or her family. Children begin to get to know themselves and also get to know the members of a new social environment in pre-school education. Supporting the child's mental, social, psychomotor and language development in pre-school education accelerates his or her development. The most important element of pre-school education, where the child meets the school environment for the first time, is the teacher. The more the teacher has and is equipped with the skills required by this educational process, the better the child will benefit from this level of education. The pre-service training process of the teacher, which has such a significant impact, is also equally important. During the pre-service training process, the teacher candidate must graduate with the necessary skills professionally, culturally, and in his/her field. In the literature it is seen that comparisons have been made between countries in areas such as teacher training, education systems, functioning, and structure. It is thought that these comparisons will contribute to and improve the field. Comparisons have been made regarding different aspects of teacher training in the field. These studies are related to programs, practices, and teacher training programs in different fields. Different countries were considered in the comparisons. For example, Çoban and Ergenekon (2021) compared the preschool education systems of Turkiye with Germany, France, Italy, Netherlands, Belgium, and Luxembourg. However, there was not observed any study regarding Turkiye and Kazakhstan. Thus, it is

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thought that comparing preschool teacher training programs in Turkiye and Kazakhstan will contribute to the literature.

METHODOLOGY

This study was conducted using the qualitative research method. In the study, data were collected by document analysis (Büyüköztürk et al., 2014). Official institutions were taken into consideration in collecting data. While the websites of the Council of Higher Education and Balıkesir University were used as sources collecting data about Turkiye, the website of the Kazakh National Girls Pedagogical University served as the source obtaining data about Kazakhstan. The data were interpreted by content analysis (Yıldırım & Şimşek, 2018).

CONCLUSION

In the light of the data obtained in the research, it is seen that Turkiye and Kazakhstan realize the importance of pre-school education. The more equipped the teachers who will work in this field are trained, the more positively it will affect the pre-school education system. It has been determined that there are similarities in terms of the purpose of pre-school education, the process of training teachers, and employment opportunities in Turkiye and Kazakhstan. As a result of this research, it was seen that the education process of preschool teachers in Turkiye and Kazakhstan was similar in some areas. The findings obtained were also supported by research in the literature. At the end of the study, suggestions were made that could contribute to pre-school education literature.

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THE REVIEW OF ACADEMIC STUDIES ON INSTRUCTIONAL LEADERSHIP MODEL IN THE FIELD OF EDUCATIONAL ADMINISTRATION IN RECENT YEARS

Harun Ceylan
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ABSTRACT

The aim of this study is to establish a general pattern of graduate studies on instructional leadership models in the field of educational administration in recent years. The changes and trends of academic studies on instructional leadership models in the National Thesis Center of Higher Education Council of Turkiye (YÖK) were examined. As a result of the search in the National Thesis Center with the keyword leadership in the field of educational administration between 2012-2022, 175 postgraduate studies were found. Of these 175 studies, 9 are written on instructional leadership model. The studies are conducted using bibliometric analysis. Instructional leadership, which is one of the leadership models, refers to the behaviors used by school principals, teachers, and educational supervisors in influencing school partners and school-related situations; it differs from other types of leadership in that it focuses on learning and teaching processes. Instructional leadership has been extensively examined in postgraduate studies, shedding light on a remarkable accumulation of knowledge. It is seen that studies on instructional leadership have been increasing both nationally and internationally in recent years.

Keywords: Instructional leadership, systematic review, leadership models

INTRODUCTION

In order to meet all these expectations, it is vital that the limited resources available to us are used effectively. In the qualified use of human and material resources at the target point for the organization, managers should have leadership qualities as well as knowledge about management. Leaders who have power and ability in the education system can increase the speed of restructuring for the future. However, recently leadership has been the subject of study for many researchers. Researchers are influenced by multiple factors when choosing thesis topics and some factors are more important than others. Complexity, creativity and networks, topics that are thoroughly discussed during the courses taken in postgraduate education have an important role in students' choice of topics (Olalere, 2014).

The aim of this study is to establish a general pattern of graduate studies on instructional leadership models in the field of educational administration in recent years. The changes and trends of academic studies on instructional leadership models in the National Thesis Center of Higher Education Council of Turkiye (YÖK) were examined. As a result of the search in the National Thesis Center with the keyword leadership in the field of educational administration between 2012-2022, 175 postgraduate studies were found. Of these 175 studies, 9 are written on instructional leadership model.

According to English (2002), educational administration is a science with application and research processes. Can (2018) defined educational administration as "the process of operation, evaluation and development in order to meet the need for education in society". Özdemir (2018) defined educational administration as "the branch of science that examines the management processes in education" and stated that the main purpose of educational administration is to realize the educational service in the best way by using the material and human resources of organizations in a useful way. Instructional leadership is a leadership model expressed by the administrators' behaviors for the benefit of the school and adopting the understanding of being a role model within the school.

Among the activities carried out in educational institutions, teaching comes first, and all other activities fall behind. Therefore, the instructional leadership approach that focuses on teaching has a very important position. Within the framework of this important position, it can be said that research in the field of instructional leadership is increasing day by day in domestic and foreign literature reviews. It can be said that instructional leadership has important consequences in educational institutions as an organization, from the perspective of teachers and students. Although school principals are not the only ones who are responsible for leading instruction, the most important feature of principals is that they have instructional leadership characteristics. Principals are responsible for creating the best instructional environment on their own initiative (Hoy & Hoy, 2013). The instructional leadership model has outlined the model of effective school principalship and has become prominent in school leadership research. According to Townsend (2019), the instructional leadership model has become a focus for two different reasons. First, instructional leadership has been adopted as a successful leadership model in different countries. Second, instructional leadership places a strong emphasis on student feedback and learning processes. Instructional leadership differs from other leadership models in that all stakeholders are channelled towards instruction (Şişman, 2016).

Therefore, it can be said that instructional leadership model is very important for the development and welfare of teaching and learning in schools. Instructional leaders can contribute to the development of the education system and ensure that it produces effective results. However, instructional supervision is believed to improve students' learning by improving teaching. For these reasons, instructional supervision activities carried out by school principals are very important for the development of teaching and students (Deniz & Erdener, 2020). For this reason, research that will contribute to the studies on instructional leadership model in schools can be considered important.

METHOD

In this study, which is a systematic review, document analysis and content analysis methods were used in terms of the findings of the articles analyzed. The findings obtained from the study were analyzed in the light of the systematic review. The data obtained after the systematic review were processed with bibliometric analysis and the results obtained were presented.

The population of the study consisted of master's and doctoral theses written in the field of educational administration with the title of leadership, and the sampling area consisted of 175 studies from "January 1, 2012" to "December 31, 2022" on the YÖK National Thesis Center website, where the word "Educational Administration" was filtered in the "Branch of Science" section and the word "Leadership" was filtered in the "Thesis Name" section, and 9 of them were determined to be related to instructional leadership.

FINDINGS AND CONCLUSION

Teachers' perceptions of school principals' instructional leadership behaviors were found to be highly positive, and according to teachers' perceptions, there was a moderate level of interest in the instructional leadership approaches of administrators and the creativity of employees. It was seen that the level of school effectiveness for the perceptions of the teachers participating

in the research did not create a difference in terms of gender and tenure but created a significant difference in terms of professional seniority (Çakır, 2021). Administrators' demonstration or development of instructional leadership behaviours in school practices positively and significantly affects the happiness in the school climate. There is a positive and weak relationship between administrators' instructional leadership approaches and employees' autonomy. On the other hand, as a result of the evaluations, a positive relationship was found between the instructional leadership approaches perceived by teachers in administrators and the motivation of employees. Changes in the education system can negatively affect teachers, for example, primary school teachers were negatively affected by the changes resulting from the 4+4+4 education system (Dalkıran & Erdener, 2018). When the relationships between the instructional leadership model scale and the teacher motivation scale were examined, it was found that there was a positive relationship between the levels of the instructional leadership model scale and the levels of the motivation scale. It was seen that the opinions of teachers and principals about the instructional leadership behavior levels of teachers were at a high level (Kumbasar, 2022).

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TEACHING ENGLISH GRAMMAR THROUGH PHRASEOLOGICAL UNITS

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ABSTRACT

It is a common knowledge that grammar is of paramount importance in language teaching. If a person knows English grammar, he or she is able to speak in a correct and clear way. We consider that grammar should be taught and students should know it. Nowadays there exist a lot of techniques and methods of teaching English grammar. Today, English grammar can be taught through games, proverbs and sayings, different approaches, etc. The present article describes the ways of using phraseological units in teaching English grammar. The main task of this work is to prove that phraseological units can be really helpful in teaching grammar. Phraseological units are ready-made stable word combinations; thus they represent a wonderful opportunity to teach English grammar. Some ideas of implementing English phraseological units in teaching grammar are discussed in this article. Ways of teaching English grammar through Phraseological Units are discussed in this piece of work. The results of the research are just amazing.

Keywords: Teaching grammar, English Language (EL) teacher/learner, teaching method, everyday speech, acquiring skills, phraseological unit

"A person without knowledge of English grammar
is like a tree without roots."

Language is an art, and grammar lies at the core of this art. That is why grammar is of paramount importance in language teaching. Teaching grammar involves teaching students to think creatively. It is about giving students the opportunity to make up their own sentences by organizing words and phrases in the right form and order.

Nowadays we can state the fact that English is the most popular language for teaching a foreign language. Every year the need for its knowledge increases. Millions of people speak English as their first language, while others use it as a second language for successful socialization. Here we would like to mention that if a person knows English grammar, he or she is able to speak in a correct and clear way.

It is generally accepted that there are four basic language skills that should be acquired by any EL learner. They are listening, speaking, reading, and writing. Grammar does not represent a language skill, but it is an essential language component a learner should assimilate in order to speak and be understood correctly. It improves learners' proficiency in the four language skills. We consider that grammar should be taught, and students should know it. But we are quite aware of the fact that teaching English grammar is not an easy task because grammar is sometimes difficult and boring for our students. The teachers' task is to engage the students, to motivate them. English Language Teachers should always be in search of something new and interesting, captivating, and useful.

This research is aimed at selecting English phraseological units and revealing the ways of using phraseological units in teaching English grammar. Thus, we can state the main goals of the present article. They are the following:

- to define the areas of grammar where English phraseological units as language means can be used for teaching;

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- ü to identify approaches in teaching grammar to EFL students through English phraseological units;
- ü to suggest a set of grammar exercises based on phraseological units that could be really effective in teaching English grammar.

Nowadays there exist a lot of techniques and methods of teaching English grammar. Today, English grammar can be taught through games, proverbs and sayings, different approaches, etc. The main task of this work is to prove that phraseological units can be really helpful in teaching grammar.

Phraseological units are ready-made stable word combinations. In linguistics we can find different opinions regarding its definition. For example, according to Molotkov A.I., a phraseological unit does not consist "of words, but components that have lost the characteristics of a word" [1, p. 25]. According to Telia V.N., phraseological units come into being "on the basis of such a figurative representation of reality, which reflects the everyday empirical, historical or spiritual experience of a speaking community, which is certainly associated with its cultural traditions, and the subject of speech activity is always a subject of national culture" [2, p. 214]. According to Kunin A.V., "phraseological units are stable combinations of lexemes with a completely or partially rethought meaning" [3, p. 89].

To define the areas of English grammar where phraseological units as language means can be used for teaching, an experiment with first-year students, who study English as a foreign language, has been realized. They had to give answers to the questionnaire. Our aims were to determine what they know about phraseological units, to identify the areas (topics) of English grammar the first-year students would like to improve with the help of phraseological units. The questionnaire included the following questions:

- Question 1. Have you ever heard of phraseological unit? Can you define this term? Can you give examples?
- Question 2. Is it relevant to apply phraseological units while teaching/learning English grammar?
- Question 3. What areas (topics) of English grammar would you like to improve with the help of phraseological units?
- Question 4. Do you use phraseological units in your everyday speech?

According to the results of the questionnaire based on the questions above, we had the following results.

- A great part of students have heard of the phraseological unit but they found it difficult to define this language phenomenon;
- the first-year students could give some examples of phraseological units, such as "*once in a blue moon*", "*white elephant*", "*to be all ears*" and some others;
- all students consider that it is relevant to apply phraseological units while teaching/learning English grammar, because it will be interesting and motivating;

- half of the students think that it is up to the EL teacher to choose the grammar area to be improved, and there were those ones who would like to improve the following grammar areas: plural number of nouns, articles, verb tenses, voice, mood, adjectives, and prepositions.
- a large group of students do not use phraseological units in their everyday communication.

As a result of the survey, we have concluded that special attention should be paid to teaching English grammar through phraseological units. The first thing that has been done is selecting certain phraseological units to be applied to teaching grammar. Secondly, their meaning has been studied by the students who will be able to use them in their everyday speech. Thirdly, the process of distributing the phraseological units to certain grammar area has taken place. And finally, a set of examples how phraseological units can be used in teaching English grammar to EFL students have been offered.

We have worked with the English-Russian Phraseological Dictionary by Kunin A.V. and selected English phraseological units for their further implementation. For example, if the focus is on teaching verbs the following can be used by the EL teacher: *to get into deep water* [4, p. 799] – to be in dangerous situation; *not to trust somebody an inch (a yard)* [4, p. 780] – to completely distrust someone; *to become a mere vegetable* [4, p. 788] – to lead a miserable life, etc.

As for teaching articles, the following can be applied: *gone with the wind* [4, p. 823] – to disappear without leaving a trace; *to have a sweet tooth* [4, p. 772] – to be fond of sweets; *be poor as a church mouse* [4, p. 595] – to be very-very poor, etc.

In order to teach the comparative construction *as ... as* the EL teacher can use the following ones: *as brisk as a bee* [4, p. 74] – industrious, hardworking; *as proud (vain) as a peacoc*k [4, p. 569] – haughty; *as unstable as water* [4, p. 800] – unsteady, etc.

In teaching nouns (Possessive Case, Plural Number) we can use *to try one's fortune* [4, p. 780] – to try to achieve something unless you know you might not succeed; *God's truth* [4, p. 780] – the holy truth; *the union of hearts* [4, p. 784] – getting together of two beloved people; *a bird's view* [4, p. 789] – an overall look; *to take turns* [4, p. 783] – to wait for your turn, etc.

The use of phraseological units is also useful when teaching prepositions: *to get into hot water* [4, p. 799] – to find oneself in great trouble; *written in water* [4, p. 801] – swift-passing; *to be in hot water* [4, p. 799] – to have serious problems; *to look for trouble* [4, p. 778] – to search for problems; *to dance on a volcano* [4, p. 791] – to try doing risky things; etc.

After the phraseological units have been carefully selected, their meaning has been studied and they have been distributed to a certain grammar aspect, a set of exercises has been suggested for being used while teaching English grammar.

Exercise 1. Use the articles where it is necessary.

1. When they got to their house at last, they were as happy as ___ clam.

2. It should be mentioned that she buys a bar of chocolate every day, because she has ____ sweet tooth.

3. I know him quite well; he is as poor as ___ church mouse.

4. The athlete was as strong as ___ ox.

5. I cannot see them anywhere, they seem to have gone with ___ wind.

Exercise 2. *Use prepositions instead of blanks*.

1. I think we shall get ____hot water soon.

2. He cannot stay still, he always looks ____ trouble.

3. Can you help me? I am _____ in hot water.

4. Please, do not follow her example! She dances ____ a volcano.

5. I feel sorry for her, because her dream was written ___ water.

Exercise 3. *Open the brackets using the comparative construction as… as.*

1. She toils much. She is _____ (bee, brisk).

2. His friend does not see anyone. He is _____ (a peacock, vain).

3. My father has read a lot of books in his life. He is _____ (Solomon, wise).

4. Unfortunately, I do not have any time for you. I am _____ (bee, busy).

5. John changes his mind each minute. He is_____ (water, unsteady).

Exercise 4. *Use the following phraseological in the sentences of your own using Present Simple, Past Simple and Future Simple*: ***to get into deep water, not to trust somebody an inch (a yard), to become a mere vegetable, to give with vocals (to sing), to mend matters (to improve the situation).***

These have been exercises that are recommended to be used in teaching grammar through phraseological units. We consider that teaching phraseological units is interesting and captivating. It is noteworthy that all students could do the above-mentioned exercises. They enlarged their vocabulary with many new phraseological units. Also, they were able to speak in real-to-life speaking situations using those phraseological units, to watch video material containing phraseological units and understand the language spoken there, to narrate a story where phraseological units were introduced.

Concluding, we would like to point to the fact that teaching grammar is of paramount importance in language teaching. If a person does not know grammar rules, he is not able to speak correctly, he is like a tree without roots. It goes without saying that grammar makes our speech sound correct and clear. Nowadays there exist a lot of techniques and methods of teaching English grammar. Today, English grammar can be taught through games, proverbs and sayings, different approaches, etc. The present article describes the ways of using phraseological units in teaching English grammar. The main task of this work was to prove that phraseological units can be really helpful in teaching grammar. It is a great challenge for EL teachers. They can use different ways of teaching. This research suggests some ways of teaching

English grammar through Phraseological Units. We highly recommend the exercises introduced here and we do believe that they will help students to speak English fluently, with no grammar mistakes and overcome all obstacles.

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PROSPECTIVE MATHEMATICS TEACHERS' TECHNOLOGICAL PEDAGOGICAL CONTENT KNOWLEDGE COMPETENCIES FOR 21ST CENTURY SKILLS AND DIGITAL PROFICIENCY PERCEPTIONS

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ABSTRACT

We aimed to examine prospective mathematics teachers' technological pedagogical content knowledge competencies for 21st century skills and digital proficiency perceptions and the relationship between these variables in this research. We conducted the research in an explanatory correlational research model. We determined the sample using the convenience sampling method. The sample included 178 prospective mathematics teachers from a faculty of education at an university in the west of Turkey. We used the "Technological Pedagogical Content Knowledge Scale for 21st Century Skills" and the "Teacher Candidate Digital Proficiency Perception Scale" to collect data. As a result of the research, we found that prospective mathematics teachers' technological pedagogical content knowledge competencies for 21st century skills were at a medium level and their digital proficiency perceptions were at a high level. We found that there was a moderate positive relationship between the participants' technological pedagogical content knowledge competencies for 21st century skills and their digital competence perceptions.

Keywords: prospective mathematics teacher, technological pedagogical content knowledge competency, 21st century skills, digital proficiency perception.

INTRODUCTION

Technology is developing at a great pace and is included in our working environments. These developments in technology also present their effects in the field of mathematics education. Thanks to the use of technology, students' attention is drawn and they are motivated. The age we are in is the age of technology and 21st century individuals are expected to have the requirements of the age. Considering that technology is a tool, teachers who can use this tool effectively will be able to introduce students to technology correctly and effectively by incorporating 21st century skills into their education programs (Önal, 2020). The use of technology in mathematics education is of great importance, but the efficient use of technology is one of the issues that need attention. Teachers' technological pedagogical content knowledge competencies and digital proficiencies are essential for student development. Usta and Korkmaz (2010) stated that as the level of technology use of teachers increases, student achievement also increases.

In this study, we aimed to examine prospective mathematics teachers' technological pedagogical content knowledge competencies for 21st century skills and digital proficiency perceptions and the relationship between these variables. In line with this purpose, the research problems are as follows:

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1. What is the level of prospective mathematics teachers' technological pedagogical content knowledge competencies for 21st century skills and digital proficiency perceptions?

2. What is the relationship between prospective mathematics teachers' technological pedagogical content knowledge competencies for 21st century skills and digital proficiency perceptions?

METHOD

We conducted the study in an explanatory correlational research model. In the study, we determined the sample with convenience sampling method. The sample included 178 prospective mathematics teachers from the faculty of education of a university in western Turkey. We used an online form consisted of three parts to collect the data of the study. The first part of the form includes the information form that we formed to reach the demographic information of the prospective teachers. The second part of the form includes the "Technological Pedagogical Content Knowledge Scale for 21st Century Skills (TPACK-21)" developed by Valtonen et al. (2017) and adapted into Turkish by Alpaslan et al. (2021) and the third part includes the "Teacher Candidate Digital Proficiency Perception Scale (TCDPPS)" developed by Karakuş et al. (2022). We used the statistical analysis package program (SPSS 24) to analyze the data. We calculated descriptive statistics to determine the distribution of scale scores. After conducting normality tests, we determined the relationship between participants' technological pedagogical content knowledge competencies for 21st century skills and digital proficiency perceptions with Pearson correlation coefficient.

FINDINGS

To answer the first research problem, we calculated the descriptive statistics of the scale scores obtained from the participants' responses to the scale items. The descriptive statistics are shown in Table 1.

Table 1. Descriptive Statistics of TPACK-21 ve TCDPPS Scores

Scales	N	Minimum	Maximum	$\bar{x}$	S
TPACK-21	178	76	228	149.24	31.55
TCDPPS	178	57	130	107.72	16.37

In Table 1, it can be seen that the mean score on the TPACK-21 is $\bar{x}$=149.24. According to this score, we interpreted that prospective mathematics teachers' technological pedagogical content knowledge competencies for 21st century skills are at a moderate level. Similarly, Table 1 demonstrates that the mean score on the TCDPPS is $\bar{x}$=107.72. According to this score, we interpreted that prospective mathematics teachers' digital proficiency perceptions are at a high level.

To answer the second research problem, we calculated the Pearson correlation coefficient between the participants' TPACK-21 scores and TCDPPS scores. The correlation analysis is shown in Table 2.

Table 2. Correlation Analysis of TPACK-21 score and TCDPPS score

Variables	N	p	r
TPACK-21 score* TCDPPS score	178	.000	.527

We found that there was a positive and moderately significant relationship between the TPACK-21 scores of the participants and their TCDPPS scores, r=.527, p<.05 (Table 2).

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

As a result of the research, we found that prospective mathematics teachers' technological pedagogical content knowledge competencies for 21st century skills were at medium level and digital proficiency perceptions were at high level. We found that there was a positive moderate relationship between the participants' technological pedagogical content knowledge competencies for 21st century skills and digital proficiency perceptions. Kaya and Uyangör (2022) concluded that the technology integration self-efficacy perceptions of education faculty students were high. According to Erten (2019), the 21st Century Learning Partnership advocates the need to raise academic and productive individuals in order to prepare individuals for the 21st century. Erdoğan and Şahin (2010) concluded that as the knowledge of prospective teachers increases, their professional self-efficacy also increases, and emphasized that an education using technological pedagogical content knowledge will have positive effects on prospective teachers. By determining pre-service teachers' technological pedagogical content knowledge competencies for 21st century skills and digital proficiency perceptions in line with the scales and associating them with each other, researchers can have an idea about the individual development of prospective teachers and their individual development can be supported. The widespread use of such studies can contribute to the integration of prospective teachers' use of technology into their fields and the creation of useful content.

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TWO WORLD NATIONS IN EDUCATION: A COMPARISON OF TEACHER TRAINING PROGRAMS IN UZBEKISTAN AND TURKIYE

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ABSTRACT

Many important studies have been carried out in national and international literature to improve teacher qualifications and to train qualified teachers. Improving the quality of teachers also means improving the quality of the existing education systems of countries. For this reason, it is extremely important to examine the teacher training programmes implemented in different countries, especially in the process of developing primary teacher training programmes. This study, which aims to examine and compare the programmes for training primary school teachers in Turkiye and Uzbekistan, was carried out using the method of document analysis, which is one of the qualitative research methods. The education system of both countries in general, similar, and different aspects of primary teacher training programmes, requirements for admission of prospective primary teachers to the programme, courses and their contents in the primary teacher training programme were examined in terms of common elements and differences. When the data obtained from the research were examined, it was found that the primary teacher training programme implemented in both countries has similar aspects as well as differences in some respects.

Keywords: Comparative education, teacher education, primary teacher education programme, primary teacher

INTRODUCTION

Many important studies have been conducted in national and international literature in order to increase teacher qualifications and train qualified teachers (Kazu & Aslan, 2011; Göçen Kabaran & Görgen, 2016; Çam & Kazu, 2022). The increase in teacher quality indicates an increase in the quality of the existing education systems of countries. For this reason, it is extremely important to examine the teacher training programs implemented in different countries, especially in the process of developing a primary teacher training program. In this study, the primary teacher training programs in Turkiye and Uzbekistan were tried to be examined within the scope of comparative education. The education system of both countries in general, similar, and different aspects of the primary teacher training program, the prerequisites for the admission of prospective primary teachers to the program, the courses and contents of the primary teacher training program were examined in terms of common elements and differences. In the 21st century, it was tried to evaluate the positive and negative aspects, deficiencies, and qualified aspects of both countries' programs in classroom teacher training. Therefore, as a result of the findings of this research, it is thought to be important for the development of education systems for both countries. In this study, which aims to compare the primary teacher training programs in Turkiye and Uzbekistan from an interdisciplinary perspective, answers to the following questions will be sought. 1.What are the similarities and differences between the general education systems in Turkiye and Uzbekistan? 2. What are the similarities and differences between the undergraduate primary teacher training programs in Turkiye and Uzbekistan? 3. What are the similarities and differences in the course contents of the undergraduate program for primary teacher training in Turkiye and Uzbekistan?

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METHOD

This study, which aims to examine and compare the undergraduate programs aiming to train primary school teachers in Turkiye and Uzbekistan, was conducted by document analysis method, which is one of the qualitative research methods. Both the related studies in the literature and the knowledge and experiences of the researchers were utilized as documents.

FINDINGS AND INTERPRETATION

When some similarities and differences between the general education systems in Turkiye and Uzbekistan are analysed, it is seen that the education process in both countries is handled at four levels: pre-school education, primary education, secondary-high school, and higher education. In Turkiye, pre-school education covers children aged 36-68 months and each age group is categorized within itself. Although pre-school education is not compulsory in Turkiye, efforts are being made to make it compulsory for 5–6-year-olds. Preschool education is free of charge in public schools, although some private nurseries charge a fee. Primary education is compulsory for a total of 8 years, 4 years of primary school and 4 years of secondary school. Secondary-high school education is 4 years. However, at the end of secondary education, some high schools with a high level of success according to the high school entrance exam have a "Preparatory Class" where foreign language education is emphasized. The total duration of education in such high schools is 5 years. Higher education continues as 4 years of bachelor's degree, 2 years of master's degree, 4-5 years of doctorate. Preschool education in Uzbekistan is planned as nursery school for 2-4 years and kindergarten for 3-7 years. Preschool education is not compulsory. Primary education is compulsory and 4 years. Secondary education-high school starts with 5 years of general secondary school (5th-9th grades) and then differentiates for high school level. Students can choose to study in academic high schools for 2 years or vocational schools for 2 years. Those who do not make these choices have to study 10th and 11th grades at high school level. A person who has studied for 2 years in a vocational school can be admitted to the higher education institution of his/her choice without an exam and with an oral interview. When the similarities and differences of primary teacher training undergraduate programs in Turkiye and Uzbekistan are examined, it is seen that both countries attach importance to 21st century competencies in updating the program in teacher training processes and are sensitive about the selection of new courses. There are some differences in the higher education admission process of the countries. However, it is seen that ministries and higher education institutions work in cooperation in the functioning and policies of both countries. In both countries, primary school teachers are trained by faculties of education within universities in 4 years and admission to faculties of education is realized by examination. Although both countries have internship training for school practices, this situation differs. Teaching practice, which is only carried out in the 4th grade in Turkiye, is practiced for 4 years in Uzbekistan. In Turkiye, 3rd and 4th year students who do their practicum experience do not receive tuition fees. In Uzbekistan, if there is no classroom teacher in the practicum school, student teachers are paid for up to 10 hours of class time. In Turkiye, classroom teachers who are appointed to the MoNE must participate in the "Candidate Teacher Training Program". However, in Uzbekistan, teachers can practice their profession in accordance with the decisions made and negotiations with public or private schools. While in Turkiye, teachers have to take a

two-stage exam for MoNE appointment, there is no such exam requirement in Uzbekistan. When the similarities and differences of the course contents of the undergraduate primary teaching programs in Turkiye and Uzbekistan are examined, it is seen that the undergraduate courses in both countries include professional knowledge, field education and general culture courses. In both countries, there are no elective courses at the first-year undergraduate level. All courses are compulsory. Some compulsory courses are common across countries. It is seen that some courses that were removed from the current undergraduate program in Turkiye, which started to be implemented in 2018, are taught in Uzbekistan's undergraduate program.

CONCLUSION, DISCUSSION AND RECOMMENDATIONS

When the data obtained from the research are examined, it is noticeable that the primary teacher training programs implemented in both countries have aspects that can benefit from each other. In particular, the fact that the school practice course at the undergraduate level in Uzbekistan is carried out for 4 years provides a great advantage for teachers. It is suggested that a similar practice can be reflected in the undergraduate program in Turkiye. At the same time, it is seen that some courses and contents in both countries differ. By examining these courses, both countries can make innovations in their elective courses by considering regulations and applicability. Finally, in the current undergraduate program implemented in 2018 in Turkiye, it is suggested that some of the courses that existed in the previous years and were removed today are important courses in classroom teacher training and should be added by reviewing the undergraduate program again.

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MEETING THE EXPECTATIONS: ESSENTIAL SKILLS FOR 21st CENTURY TEACHERS

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ABSTRACT

The critical competencies needed by teachers in the twenty-first century are highlighted in this article. The author places a strong emphasis on the value of cultural competence, differentiated teaching, cooperation and communication skills, and critical thinking abilities in teacher preparation. According to the article, these competencies are important for instructors to fulfil the demands of 21st century education and equip their pupils for success in the digital age and beyond. Overall, this essay offers insightful information about how education is evolving, and the competencies instructors need to be successful in the contemporary classroom.

Keywords: Essential skills, teachers, 21st century, technological proficiency, cultural competency, instructional differentiation, collaboration, communication skills, critical thinking abilities, teacher education, digital world, changing landscape, education

INTRODUCTION

The job of instructors has radically altered as the digital era advances. Teachers today are expected to help their pupils acquire critical thinking abilities in addition to imparting knowledge. Because of this change in expectations, educators now need to build their pedagogical skills in order to deliver successful education in the digital era. I made the decision to use my PhD dissertation, which discussed how to teach critical thinking in secondary schools. I have gathered data for my research on this issue from several foreign works. Even though this subject may be thought of as well-taught, it is nevertheless unique in Uzbekistan.

As educators, we must consider carefully how to use technology to enhance the effectiveness and engagement of our teaching. To satisfy the requirements of education in the twenty-first century, we must thus modify our teaching strategies and acquire new abilities. To instruct children in critical thinking successfully, teachers must have good critical thinking abilities themselves. This involves the capacity to assess sources, analyze data, and reach thoughtful conclusions. As of the Wisconsin University research critical thinking is an important life skill in today's culture since young individuals are entering a work market that is growing and diversified and changing at an accelerating rate. It is more important than ever to make sure that young adults have the mental capacity to adjust flexibly and creatively to changing job markets so that they can compete for occupations that didn't even exist a few years ago.

As per Libyan scholar Salamah Embark Saleh, University of Sabratha, mentions the importance of critical thinking in education as following: all facets of life, including education, have undergone tremendous transformation in the twenty-first century. pupils in the twenty-first century should acquire different talents than those pupils in the previous century did. A changed social life, a different economic environment, and a more demanding and skill-oriented job are all things that 21st century schools and colleges can help students prepare for. Digital literacy, technical advancements, multicultural cultures, human mobility, international communication, social networking, inventions, and inclusion are all hallmarks of the twenty-first century. In other words, pupils in the twenty-first century must acquire the requisite abilities. Like other nations, Libya seeks to advance its educational system in all areas, including teaching

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techniques, instructional materials, and assessment systems for all disciplines, to better equip its inhabitants for living in the ganging globe. 'Critical Thinking' application as a 21st century ability and to inquire into their perspectives on the difficulties they have in doing so. The importance of teacher education has increased significantly in the twenty-first century. Students now have greater access to knowledge than ever before because to the development of technology and globalization. This means that teachers must be ready to instruct in various ways and with various resources. We shall look at some of the demands placed on teacher education in the twenty-first century.

1. Knowledge of Technology

An awareness of technology is one of the most crucial requirements for teacher education in the twenty-first century. Technology in the classroom needs to be used wisely by teachers. This include being able to use software, applications, and other technologies that can improve learning in addition to computers and tablets. The way we work and live have been significantly changed by technology, and this also applies to education. Artificial intelligence and platforms have improved the interactivity, effectiveness, and engagement of high-quality teaching and learning. However, so as to fully benefit from these technological developments, educators are supposed to be well-versed in both their uses and drawbacks.

One of the key skills that modern teachers must possess is digital literacy. This refers to the ability to use digital tools and platforms effectively for teaching and learning purposes. Digital literacy encompasses a range of skills, including basic computer skills, internet navigation, social media usage, multimedia creation, and online collaboration. Teachers who are digitally literate can create more engaging and interactive learning experiences for their students, as well as communicate with them more effectively. Moreover, teachers must also be knowledgeable about the various types of technology available and how they can be used to enhance the learning experience. They should be able to identify the appropriate technology for different learning objectives and be able to integrate it into their lessons effectively. For instance, they can use online simulations, virtual field trips, gamification, and personalized learning platforms to cater to different learning styles and needs.

Furthermore, teachers need to stay up-to-date with the latest technological advancements and trends. This involves attending professional development sessions, participating in online communities, and reading relevant publications. By doing so, they can learn about new tools and strategies that can improve their teaching practices and enhance student learning outcomes. Another crucial aspect of technology integration in education is digital citizenship. This refers to the responsible use of technology for communication, collaboration, and information sharing. Teachers must teach their students about digital citizenship principles such as online safety, privacy, ethics, and cyberbullying prevention. By doing so, they can help their students become responsible digital citizens who can navigate the digital world confidently and safely.

In addition to these skills, teachers must also possess strong pedagogical knowledge and skills. Technology is not a substitute for effective teaching practices, but rather a tool that can enhance them. Therefore, teachers must be able to design and implement effective lesson plans, assess student learning, provide feedback, and differentiate instruction based on student needs.

Teachers must also be able to instruct kids on how to successfully use technology. This includes instructing students on internet safety, effective search engine usage, and the evaluation of online sources for validity and dependability. In conclusion, technology has become an integral part of education, and teachers must possess a thorough understanding of its applications. The ability to use technology effectively can help teachers create engaging and interactive learning experiences that can benefit students in numerous ways. Therefore, it is essential for teacher education programs to prioritize the development of technological skills and knowledge alongside pedagogical knowledge and skills. By doing so, we can prepare the next generation of teachers who can leverage technology to create a more effective and equitable education system.

2. Compatibility with cultures

Cultural competency is a key requirement for teacher education in the twenty-first century. Teachers must be able to interact with pupils from various racial and cultural backgrounds. To properly interact with kids who speak other languages, it's necessary to comprehend various cultural conventions and values. Teachers must also be able to foster an environment in the classroom that is inviting and inclusive of all kids. This entails recognizing variety and encouraging tolerance of all civilizations.

Incorporating technology in the classroom can be a powerful tool for promoting cultural competency. With the use of digital tools and platforms, teachers can expose their students to diverse cultures and perspectives from around the world. For instance, they can use video conferencing to connect with classrooms in other countries or use online resources to learn about different cultural traditions and practices. Moreover, technology can also help teachers cater to the diverse learning needs of their students. For instance, students who speak English as a second language may benefit from digital tools that provide real-time translation or language learning resources. Similarly, students with disabilities can benefit from assistive technology that helps them access learning materials and participate in classroom activities. However, it is important to note that technology is not a panacea for cultural competency. Teachers must still possess the necessary skills and knowledge to interact with students from diverse backgrounds effectively. They must be able to recognize and address cultural biases and stereotypes and create an inclusive learning environment that values diversity.

To achieve this goal, teacher education programs must prioritize the development of cultural competency skills alongside technological skills. This can involve training on cultural sensitivity, multicultural education, and intercultural communication. Teachers must also be encouraged to engage in ongoing professional development to stay up-to-date with the latest research and best practices in this area. To capture, technology can be a powerful tool for promoting cultural competency in the classroom. However, it is not a substitute for the skills and knowledge required to interact with students from diverse backgrounds effectively. To prepare the next generation of teachers for this task, teacher education programs must prioritize the development of both technological and cultural competency skills. By doing so, we can create a more effective and equitable education system that values diversity and promotes inclusivity.

3. Instructional Differentiation

The capacity to differentiate instruction is another requirement for teacher education in the twenty-first century. Regardless of a student's learning preferences or aptitude level, teachers must be able to suit their demands. This entails utilizing a range of instructional techniques and tools, as well as customizing training to each student's requirements. Teachers must also have the skills necessary to use data to guide their lesson. This entails using tests to pinpoint areas in which students need more assistance and modifying education as necessary. In addition, teachers must be able to provide various forms of assessment to ensure that students are learning and retaining information. This can include formative assessments such as quizzes and exit tickets, as well as summative assessments such as exams and projects.

One of the most effective ways to differentiate instruction is through the use of technology. Digital tools and platforms can provide personalized learning experiences that cater to each student's needs and preferences. For example, adaptive learning software can adjust the difficulty level of questions based on a student's performance, while gamification can make learning more engaging and fun. However, it is important to note that technology should not be the only tool used for differentiation. Teachers must also be able to provide hands-on activities, group work, and other forms of experiential learning that cater to different learning styles. To achieve this goal, teacher education programs must prioritize the development of instructional differentiation skills. This can involve training on assessment techniques, instructional strategies, and the use of technology in the classroom. Teachers must also be encouraged to engage in ongoing professional development to stay up-to-date with the latest research and best practices in this area. Moreover, instructional differentiation can also promote cultural competency in the classroom. By catering to the diverse learning needs of their students, teachers can create an inclusive learning environment that values diversity and promotes equity.

In a nutshell, instructional differentiation is a crucial skill for teachers in the twenty-first century. It requires the use of a range of instructional techniques and tools, as well as customization to each student's needs. Technology can be a powerful tool for differentiation, but it should not be the only tool used. To prepare the next generation of teachers for this task, teacher education programs must prioritize the development of instructional differentiation skills alongside technological and cultural competency skills. By doing so, we can create a more effective and equitable education system that values diversity and promotes inclusivity.

In today's world, cultural competency is more important than ever. As society becomes increasingly diverse, it is crucial for individuals to possess the skills and knowledge necessary to interact with people from different backgrounds effectively. This is especially true in the field of education, where teachers play a critical role in shaping the minds and attitudes of young people. One way that teachers can promote cultural competency in the classroom is by incorporating technology into their teaching practices. With the use of digital tools and platforms, teachers can expose their students to diverse cultures and perspectives from around the world. For instance, they can use video conferencing to connect with classrooms in other countries or use online resources to learn about different cultural traditions and practices. Moreover, technology can also help teachers cater to the diverse learning needs of their students. For instance, students who speak English as a second language may benefit from digital tools

that provide real-time translation or language learning resources. Similarly, students with disabilities can benefit from assistive technology that helps them access learning materials and participate in classroom activities. However, it is important to note that technology is not a panacea for cultural competency. Teachers must still possess the necessary skills and knowledge to interact with students from diverse backgrounds effectively. They must be able to recognize and address cultural biases and stereotypes and create an inclusive learning environment that values diversity. To achieve this goal, teacher education programs must prioritize the development of cultural competency skills alongside technological skills. This can involve training on cultural sensitivity, multicultural education, and intercultural communication. Teachers must also be encouraged to engage in ongoing professional development to stay up-to-date with the latest research and best practices in this area.

Cultural sensitivity is a crucial component of promoting cultural competency in the classroom. This involves recognizing and respecting the differences between cultures, as well as understanding how these differences can impact communication and interactions. For instance, a teacher who is aware of the cultural norms surrounding eye contact in certain cultures may be better equipped to communicate effectively with students from those cultures. Multicultural education is another important aspect of promoting cultural competency. This involves incorporating diverse perspectives and experiences into the curriculum and providing students with opportunities to learn about different cultures and traditions. Technology can be a powerful tool in this regard, as it allows teachers to bring in guest speakers from different cultures, or to expose students to a wide range of cultural resources online.

Intercultural communication is also essential for promoting cultural competency in the classroom. This involves understanding how cultural differences can impact communication and developing strategies for effective communication across cultures. Technology can be particularly useful in this area, as it allows teachers to connect with students from different cultures in real-time, and to facilitate cross-cultural communication through online platforms. In addition to these skills, teachers must also be able to recognize and address cultural biases and stereotypes. This involves being aware of their own cultural assumptions and biases, as well as understanding how these biases can impact their interactions with students from different backgrounds. Teachers must also be able to create an inclusive learning environment that values diversity and promotes inclusivity. To prepare the next generation of teachers for this task, teacher education programs must prioritize the development of both technological and cultural competency skills. This can involve incorporating technology into teacher education programs, as well as providing training on cultural sensitivity, multicultural education, and intercultural communication. Teachers must also be encouraged to engage in ongoing professional development to stay up-to-date with the latest research and best practices in this area.

In conclusion, technology can be a powerful tool for promoting cultural competency in the classroom. However, it is not a substitute for the skills and knowledge required to interact with students from diverse backgrounds effectively. To create a more effective and equitable education system that values diversity and promotes inclusivity, we must prioritize the development of both technological and cultural competency skills in our teachers. By doing so,

we can help prepare the next generation of students for success in an increasingly diverse and interconnected world.

4. Working together

Collaboration is a key requirement for teacher education in the twenty-first century. Together with parents, administrators, and other stakeholders, instructors must be able to collaborate successfully. This entails being able to collaborate with others to solve issues, exchange ideas, and communicate clearly. Additionally, in order to help kids who may be having difficulties, instructors must be able to work in conjunction with other experts, such as social workers and counsellors. In the context of promoting cultural competency, collaboration is especially important. Teachers must work together to create an inclusive learning environment that values diversity and promotes inclusivity. This involves recognizing the unique needs and perspectives of each student, and working to create a classroom culture that is welcoming and respectful to all. One way that teachers can collaborate to promote cultural competency is through professional learning communities (PLCs). PLCs are groups of educators who come together to share ideas, discuss best practices, and collaborate on projects. By working together in this way, teachers can learn from one another and develop new strategies for promoting cultural competency in the classroom. Another way that teachers can collaborate is through partnerships with community organizations. For instance, a teacher might partner with a local cultural center to bring in guest speakers or organize cultural events. By working with these organizations, teachers can provide their students with a more authentic and immersive learning experience.

Parents also play a critical role in promoting cultural competency in the classroom. Teachers must work closely with parents to understand their children's unique cultural backgrounds and experiences, and to create a learning environment that is sensitive to these differences. This involves communicating regularly with parents, seeking their input and feedback, and involving them in classroom activities whenever possible. Administrators also have an important role to play in promoting cultural competency in schools. They must provide teachers with the resources and support they need to effectively promote cultural competency in the classroom. This might involve providing professional development opportunities, investing in technology and resources that support cultural competency, or creating policies and procedures that promote inclusivity and diversity. Ultimately, promoting cultural competency in the classroom requires a collaborative effort from all stakeholders. By working together, teachers, parents, administrators, and community organizations can create a learning environment that values diversity, promotes inclusivity, and prepares students for success in an increasingly diverse and interconnected world.

In conclusion, promoting cultural competency in the classroom is more important than ever in today's diverse and interconnected world. Technology can be a powerful tool for promoting cultural competency, but it is not a substitute for the skills and knowledge required to interact with students from diverse backgrounds effectively. To create a more effective and equitable education system that values diversity and promotes inclusivity, we must prioritize the development of both technological and cultural competency skills in our teachers. By working together, we can create a learning environment that prepares students for success in an increasingly diverse and interconnected world.

5. Lifelong Education

Finally, the value of lifelong learning must be emphasized in teacher education in the twenty-first century. Teachers must be dedicated to continuing their professional development and remaining current with the most recent findings and educationally sound methods. This entails taking use of professional development opportunities, including seminars and conferences, as well as continuing to reflect on and evaluate one's own performance. In a world that is becoming increasingly diverse and interconnected, promoting cultural competency in the classroom has become more important than ever. It is essential for teachers to understand the unique needs and perspectives of each student, and to create a learning environment that values diversity and promotes inclusivity. This involves collaborating with other stakeholders, including parents, administrators, and community organizations, to develop effective strategies for promoting cultural competency in the classroom.

One of the most effective ways to promote cultural competency in the classroom is through collaboration. Teachers must work together to create an inclusive learning environment that values diversity and promotes inclusivity. This involves recognizing the unique needs and perspectives of each student, and working to create a classroom culture that is welcoming and respectful to all. By collaborating with other teachers, educators can learn from one another and develop new strategies for promoting cultural competency in the classroom. Professional learning communities (PLCs) are one way that teachers can collaborate to promote cultural competency. PLCs are groups of educators who come together to share ideas, discuss best practices, and collaborate on projects. By working together in this way, teachers can learn from one another and develop new strategies for promoting cultural competency in the classroom. Another way that teachers can collaborate is through partnerships with community organizations. For instance, a teacher might partner with a local cultural center to bring in guest speakers or organize cultural events. By working with these organizations, teachers can provide their students with a more authentic and immersive learning experience.

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Ultimately, promoting cultural competency in the classroom requires a collaborative effort from all stakeholders. By working together, teachers, parents, administrators, and community organizations can create a learning environment that values diversity, promotes inclusivity, and prepares students for success in an increasingly diverse and interconnected world. In addition to collaboration, technology can also be a powerful tool for promoting cultural competency in the classroom. For instance, virtual reality (VR) technology can provide students with an

immersive learning experience that allows them to explore different cultures and perspectives. This can help to break down cultural barriers and promote empathy and understanding among students.

Similarly, online resources and educational apps can provide students with access to a wealth of information about different cultures and perspectives. This can help to broaden their horizons and promote a deeper understanding of the world around them. However, it is important to note that technology is not a substitute for the skills and knowledge required to interact with students from diverse backgrounds effectively. Teachers must still develop cultural competency skills that allow them to connect with students on a personal level and create a learning environment that is sensitive to their unique needs and perspectives. To create a more effective and equitable education system that values diversity and promotes inclusivity, we must prioritize the development of both technological and cultural competency skills in our teachers. By working together, we can create a learning environment that prepares students for success in an increasingly diverse and interconnected world.

Lifelong education is not only important for teachers, but also for students. In today's rapidly changing world, it is essential that students develop the skills and knowledge necessary to adapt to new situations and challenges throughout their lives. This means that education must go beyond simply imparting information and must focus on developing critical thinking, problem-solving, and communication skills. One way to promote lifelong learning is through the use of technology. Online courses, webinars, and educational apps can provide students with access to a wide range of learning opportunities outside of the classroom. These tools can also be used to personalize learning, allowing students to work at their own pace and focus on areas where they need additional support.

Another way to promote lifelong learning is through experiential learning opportunities. Field trips, internships, and service-learning projects can provide students with hands-on experiences that help them develop real-world skills and knowledge. These types of experiences also help students see the relevance of what they are learning in the classroom to their future careers and lives. In addition to promoting lifelong learning in students, it is also important for schools to provide opportunities for teachers to continue their professional development. This can include attending conferences and workshops, participating in online courses, and collaborating with colleagues. By continuing to learn and grow professionally, teachers can stay up-to-date with the latest research and best practices in education, and bring new ideas and strategies back to their classrooms. Furthermore, schools can also encourage lifelong learning by creating a culture of curiosity and inquiry. This means promoting a growth mindset among students and teachers, encouraging them to take risks, make mistakes, and learn from them. It also means fostering a love of learning by providing opportunities for students to pursue their interests and passions outside of the traditional curriculum.

In conclusion, lifelong education is essential for both teachers and students in today's rapidly changing world. By promoting a culture of curiosity and inquiry, providing access to technology and experiential learning opportunities, and encouraging ongoing professional development, schools can help prepare students for success in the 21st century. As educators, it is our

responsibility to ensure that our students and ourselves continue to learn and grow throughout our lives.

CONCLUSION

In conclusion, the importance of teacher education in the twenty-first century cannot be overstated. The ability to differentiate instruction, interact with kids from varied backgrounds, communicate with colleagues, and commit to lifelong learning are all skills that teachers need to be prepared for. By upholding these standards, educators may contribute to ensuring that all children have access to a top-notch education that will position them for success in the twenty-first century. n today's rapidly evolving educational landscape, teachers must possess a diverse set of skills and capabilities to effectively meet the needs of their students and provide a top-notch education. Four key areas where teachers must excel include the ability to differentiate instruction, interact with students from varied backgrounds, communicate effectively with colleagues, and commit to lifelong learning. By actively cultivating and honing these skills, educators can play a vital role in ensuring that every child has equal access to a high-quality education that sets them up for success in the twenty-first century. To ensure the integration of technology into our lessons and foster the development of critical thinking skills among our students, it is imperative for teachers to engage in continual learning and adapt their teaching methods accordingly. By proactively embracing new knowledge and adjusting their strategies, teachers can effectively equip children with the tools they need to thrive in the digital era and beyond.

The skill of differentiating instruction is crucial for teachers to cater to the unique learning styles, needs, and abilities of each student in their classroom. By recognizing and addressing individual differences, educators can create a conducive learning environment where all students can thrive. This includes employing various instructional methods, adapting content and materials, and providing additional support or challenges as needed. Through differentiation, teachers can unlock the potential of each child, enhancing their learning experience and overall academic growth. Interacting with students from diverse backgrounds is another essential skill for teachers. In today's multicultural and globalized society, classrooms are becoming increasingly diverse. Teachers must embrace cultural competency, empathy, and open-mindedness to create an inclusive and welcoming environment for all students. By valuing and respecting diverse perspectives, teachers can foster a positive learning environment that celebrates differences and encourages collaboration among students from various backgrounds. Furthermore, effective communication with colleagues is vital for teachers to collaborate, exchange ideas, and continuously improve their professional practice. Engaging in regular dialogue with fellow educators allows for the sharing of successful teaching strategies, problem-solving, and mutual support. By fostering strong professional relationships, teachers can collectively elevate the quality of education in their school and community.

Lastly, teachers must commit to lifelong learning, as the field of education is constantly evolving. Staying updated with the latest research, embracing new technologies, and participating in professional development opportunities are all critical aspects of this commitment. By continuously expanding their knowledge and skills, teachers remain at the

forefront of best practices, ensuring that their instruction remains relevant, engaging, and impactful for their students.

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DETERMINING THE QUALITIES THAT FACULTY MEMBERS AT THE FACULTY OF EDUCATION CONSIDER IMPORTANT IN TRAINING TEACHERS

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ABSTRACT

Teacher training plays an important role in increasing the success of society. Teacher training institutions are effective in increasing the success of society in general in the fields of education and science. This research was conducted to determine the qualities that faculty of education faculty members consider important in training teachers. In the research, case study design of qualitative research methods; In sample selection, semi-structured interviews were conducted with four faculty members selected using the appropriate sampling method. According to the research data, it has been concluded that faculty members should be able to combine technopedagogical field knowledge and skills as a characteristic that a teacher should acquire. It has been stated that a teacher candidate should be an individual who can make the teaching profession his/her life, who is sensitive, has a spiritual approach, and who can exchange power in teacher-student relationships. They consider students as individuals who reflect daily life problems to students, who do not understand different types of intelligence, who do not care about communication skills, who do not continue to improve their skills in this field, and who see teaching as a perspective focused only on financial gain, as characteristics that should not be present in a teacher candidate. In the order of importance and priority of the characteristics that faculty members want to impart in teacher training, first comes field knowledge and love of the field, followed by pedagogical field knowledge and then researching/questioning characteristics. As a result, teachers need to have positive personality traits as well as field knowledge and pedagogical content knowledge. In addition, it aims to train teachers who have field knowledge and love their field in teacher training.

Keywords: Teacher training, teacher qualifications, faculty of education

INTRODUCTION

The teacher is one of the basic elements of the teaching process. The education provided in schools are institutions that are important in helping students reach the professions they can do in line with their abilities and potential and in raising conscious citizens for society and the world. Teacher qualifications play an important role in student success (National Commission on Teaching and America's Future, 1996). The success of education programs that train teachers will also affect the success of the education system. It is stated that in order to provide qualified education, teaching activities should be created and planned to obtain efficient results (Okçu & Çelik, 2011). For this reason, the qualifications involved in teacher training and the studies carried out to increase the quality of education are important. MEB (2007) evaluated the qualifications for the teaching profession as three competence areas. These are: professional knowledge (field knowledge, field education knowledge and legislative knowledge), professional skills (Planning Education and Training, Creating Learning Environments, Managing the Teaching and Learning Process and measurement and evaluation), attitudes and values (National, Spiritual and Universal Values, approach to students). , communication and collaboration). In addition, the changing and developing approaches of the age may affect the characteristics that a teacher should have (Ergün, Oral &Yazar, 2018). In order to meet the requirements of the age and make the education process functional, teachers must have certain qualifications. Teacher training programs should prepare teachers for school life and support them with the skills and characteristics that need to be acquired for this and should be able to

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provide students with the information obtained from the pedagogical field by combining it with field knowledge. It should support the continuous development of teachers and increase their capacity to adapt to real-world problems. At this point, faculty members at the faculty of education should take part in producing solutions to the problems experienced in teacher training (Özer, 1990). This research aims to determine the qualities that faculty members at the faculty of education consider important in training teachers. The sub-problems of the research are as follows: According to the instructors, what are the characteristics that a teacher candidate is expected to acquire? What are the characteristics that a teacher should have, according to faculty members? In line with this, a semi-structured interview was held with four faculty members. According to the results of the research, faculty members should be able to combine their technopedagogical content knowledge and skills; Those who can make teaching a way of life should be open to mutual power exchange in teacher-student relations. Features that should not be present include features that reflect students' daily life problems, do not understand different types of intelligence, do not develop communication skills, and are focused on financial gain. Instructors consider field knowledge and love of the field as the most important characteristics of teachers, followed by pedagogical content knowledge and research/questioning characteristics. In summary, teachers need to have not only professional knowledge but also positive personality traits.

METHODOLOGY

This study was conducted to determine the qualities that faculty members at the faculty of education consider important in teacher training. Case study design was preferred as the research model. Case study is an approach used in studies that work on a current issue in real life, where precise boundaries are not clear (Yıldırım & Şimşek, 2018). The appropriate sampling method used in the sample selection of the research is the preferred method in close and accessible situations (Yıldırım & Şimşek, 2018). The sample of the research consists of faculty members at an education faculty in the west of Turkiye. The participants of the research are two faculty members from the Department of Biology Education, one from the Department of Computer and Instructional Technology Education, and one from the Department of Chemistry Education. An interview form consisting of four questions was used as a data collection tool in the research. In creating the interview questions, a literature review was conducted by the researchers and the general qualifications of the teaching profession were examined by the Ministry of Education (2017). After the questions were created, they were applied by taking expert opinion from an education expert. In this study, the data obtained was analyzed using the content analysis technique. In the content analysis technique, it is aimed to reach the concepts and relationships that explain the data collected for a specific purpose. For this reason, conceptualization was carried out by arranging the data logically (Yıldırım and Şimşek, 2018).

FINDINGS

The first question of the interview questions includes the question about tenure at the faculty of education. The main purpose of this question is to warm up to the interview. According to the data, the tenure of faculty members varies between 18-31 years.

This study examines the qualifications that faculty of education faculty members expect from teacher candidates, and the qualifications that teacher candidates must acquire are similar to the Teacher Profession Competencies determined by the Ministry of Education (2017). In addition, concepts such as media literacy, technopedagogical content knowledge, and respect for the social importance of knowledge were emphasized within the scope of the professional knowledge competence required from teacher candidates. Among the characteristics expected from teachers, teachers who make teaching a way of life, defend their values, are sensitive, honest, knowledgeable, have effective communication skills, and have love for humanity stand out. Characteristics that should not be present are teachers who convey daily problems to students, do not understand different types of intelligence, neglect communication skills, aim only for financial gain, complain, act unethically, are uninformed, and do not use various measurement and evaluation methods. Among the characteristics that teachers must acquire, field knowledge, love of the field, pedagogical knowledge and research skills are at the forefront.

DISCUSSION AND CONCLUSION

This research aims to determine the teacher qualities that faculty of education faculty members consider important in training teachers. According to faculty members, the qualifications that a teacher must acquire include professional knowledge, professional skills, attitudes and values. In addition, among the characteristics that they want teacher candidates to acquire, such as the ability to transfer information, the ability to think original and creatively, instilling positive attitudes, ensuring student motivation, cooperation and respect for student differences are important. According to the results of the research, teacher qualifications of teacher training institutions and the Ministry of National Education are similar. It was also emphasized that a teacher should follow the technological developments of the age, have internal motivation, and use effective communication and teaching skills. Teachers' love for knowledge and their students can improve the quality of education. The research also stated the characteristics that teachers should not have; these characteristics include conveying daily life problems to students, not understanding different intelligence types, lack of communication, seeing teaching only as a means of making money, constantly complaining, not complying with ethical behavior and lack of knowledge. As a result, it is emphasized that the qualifications that teachers must have require internalizing and constantly improving the teaching profession. The research highlights teachers' field knowledge, love of the field, pedagogical field knowledge and research/questioning skills.

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MODERN APPROACHES TO DEFINING THE TEACHER'S ROLE IN EDUCATION

Tuychieva Nodira[1]

ABSTRACT

In the article we discuss the authors propose five roles for the student and the modern teacher-car navigator, media critic and media producer, innovative designer and citizen with global connections, and describe possible pedagogical combinations of work in them. No roles are presented in a hierarchy and do not represent an exclusive list. Rather, the authors present them as a starting point to provoke discussion among educators to develop capabilities, necessary to work in a situation of total uncertainty and constant changes in the modern peace.

Keywords: Car navigator, media critic, media producer; innovative designer, globally connected citizen, teacher, student, curriculum

INTRODUCTION

Modern education is becoming more and more student-oriented. Society comes to understand that the true result of education is not just the acquisition of knowledge, but cognitive and personal development of students in the educational process. There is a merging of pedagogical and psychological goals of teaching and education. How to become irreplaceable in your business when millions of people are replaced by robots? What is the new skills model and how to use it to your advantage? What can you do right now? The answer lies on the surface. Try put together your own educational trajectory to develop “skills of the future.” Study and put into practice as many different educational experiences as possible, including unusual ones. As often as possible, at least once a month, purposefully step out of your comfort zone, routine, and commit escape into the unusual. Select training programs that help you solve specific problems together real world. All this improves the ability to live in a situation of strategic uncertainty.

METHODS

In the classical approach to defining the roles of teacher and student, the issue of control is central, and the teacher leads, whether providing direct instruction or giving students choice and options. The teacher is the leader of the educational process and dictates the educational material, pace, sequence and even the number and composition of project training groups. The teacher chooses types activities that students should engage in, be it small group discussion, responding to lectures in a large group, individual assignments in small groups or a walk in the nursery site. Thus, the student performs the role of a follower and is required to comply with directives teachers. Even when a student is encouraged to work on an "independent project", it is because the teacher supports these efforts.

However, some aspects of the classical model can serve as a basis for research modern approach in finding new roles for teachers and students. It is obvious that when forming modern approach to the role of the teacher, it is necessary to formulate terminology to clarify new approaches. Of course, there are classical approaches to student-centered learning, aimed at individual learning and differentiation, where changes in needs students is an important part of the planning process. Relatively recently to this connection personalized learning has been added, which we see as a critical factor for the new pedagogical practice.

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RESULTS

In today's learning environment we offer five roles for students and teachers - car navigator, media critic and media producer, an innovative designer, and a globally connected citizen - with responsibilities to match. Roles are not presented in a hierarchy and do not represent an exclusive list. Rather, we represent them as a starting point to provoke discussion among educators to develop capabilities, necessary to design meaningful and timely learning experiences. Student car navigator or, self-directed learning is not a new concept, but there are spaces to navigate have changed a lot. Learning opportunities are no longer limited to the physical building, but actually available almost 24 hours a day. Choosing a website, game, preferred pace, people with they will create a project, students choose their own curriculum and learning experiences. In connection with this, the modern student takes on the role of a self-teacher, and with him the need to be mindful and make informed decisions about the next steps in their learning journey. This interaction of the roles of teacher and student is obvious to any teacher. To teach we dive into exploring ideas we want to share with students.

In modern pedagogy, the formation of a new type of teacher presupposes the need to have and model professional learning. Professionalism presupposes experience, mastery of technology and excellence in practice. With extensive experience in studying how people learn, developing methods and strategies to support learning and recognize learning achievements, educators should be ready to model the consummate learner. Being a teacher and a student is crucial for self-navigation. When students take control of their own learning and make direct contributions into it? Only when they are truly involved in the learning process. But what if the chosen path potentially frivolous and of limited value? When should you enter into this process? teacher? For answers, let's look at one metaphor. “Self-navigation refers to guiding oneself at sea. Without a doubt, sea captains learn a lot in their travels, which will ultimately become the basis for their next trip. Exit student from port to sea The Internet provides an opportunity for a new kind of learning from the classroom teachers. Successful navigators have a compass and can read signs of weather, birds, and water conditions; they have there is a context for the journey. Therefore, teachers must prepare students for their online choices, social media, and the situations they may encounter.”

Based on the concept of self-directed learning, it is obvious that with self-directed learning there is a clear difference between choosing to perceive information that comes from external environments with limited human control over issues such as timing and sequencing materials - an inherently passive experience - and participation in self-selected websites, information research and critical questioning of sources, which is inherently active experience.

New types of learning aim to help students become more effective independent navigators in active request forms. Self-paced learning makes sense when students are taught self-management strategies and the ability to reflect and determine consequences the decisions they make. In many ways, the coaching approach and coaching techniques are core skills which a modern teacher should master. Teachers and trainers prepare students for independence. Through internet research, we find that students fall into a vast new world with no set rules of play or performance. They need trainers’ navigation.

The student as a media critic. It can be argued that there is general agreement that the classical literacy is an important goal in education. By classic we mean traditional reading printed materials, listening comprehension and written communication. Literacy can be considered as two sides of the same coin: receptive literacy and generative literacy. Receptive literacy is the ability to comprehend and read; Generative literacy is the ability to create meaning through writing and speech. Applying these two concepts to a wide range of media opens broad opportunities to support the modern student. The modern student must receive support in mastering the sophistication and know-how to be media literate in every format because we are bombarded information from a variety of media, including television, film, and digital sources. We are concerned that intensive and widespread distribution of multiple forms of media does not mean literacy. Students need help. Obviously, not all students are able to sort a huge stream information coming from the media, most of them are not literate. They tend to believe everything they see, read, and hear. Healthy scepticism does not exist, and illiteracy in media coverage is increasing. New media literacy directly impacts students' ability to obtain information and the ease with which they can do it. Many students (and adults) use quick search in Internet to find information and select the first item that appears on the screen. This behavior is habitual, not conscious. Preparing students to critique online sources and instructing them about how to read a website are critical to the development of self-navigation.

Although the study of great works of literature is fundamental to most schools and is an integral part of formal education, the curriculum as generally does not include regular and close attention to the formal study of modern tools mass media. As noted earlier, students receive a constant stream of information from these sources and do not necessarily criticize them because they did not study them. No formal study television and film the likelihood of creating quality personal presentations using visual media decreases. We believe that if students embrace this new role as media critic and media producer, then the curriculum should enable them to create films, podcasts, websites, and other products in a knowledgeable, technically sound and aesthetically pleasing manner. Thanks to with a variety of media creation tools available, creating media files is relatively easy. Yet again, the most important thing is that the result reflects quality. The student as an innovative designer.

DISCUSSION

The future will require innovative solutions, so innovative people? The ability to generate fresh ideas, think boldly and invent requires a learning culture that supports generative and playful thinking, flexible collaboration, and design possibilities [8, p. 85]. The role of the innovative designer is that students have a natural inclination to playfully exploring possibilities that have a wide scope. The teacher can actively encourage students to look for new situations to invent and to study the efforts of others who are looking for innovative possibilities. We specifically chose the word "designer" for this modern role, combining it with innovation. Over the past few years, design has been a key focus in education. IN architecture, technology or art, there is a playful and creative approach to “design thinking” that can serve educators as they consider their roles. We claim that the word "design" means artistic compositional choices made to find creative solutions to a real-life situation, often with economic impact. Design concept can be discussed quests according to the modern curriculum as a way to engage students in learning

timely and current problems. Design is based on approaches to the composition of a solution, be it designing a building, creating a painting or development of an engineering solution. Design Thinking Requires Open and Playful Consideration capabilities and manipulation of key elements before final delivery carefully structured answer. "Elements" are unique to their wide range applications. For example, an architect creating a design takes into account elements such as style, proportions and materials. A musical composer works with the elements of harmony, melodic line, rhythm and various instruments. When creating the narrative of a film, the director takes into account character, plot, settings, editing, special effects and camera angles. Computer programmers check platforms, images, features, budget and audience when determining the encoding for applications. Curriculum developers shape learning opportunities in relation to content, skills, and criteria for assessment.

The modern learner must be immersed in the possibilities for innovation when combining elements design to generate solutions. So, instead of going through strict sequences to "follow directions", the creative designer fully understands that the result must be a thoughtfully presented solution; but to achieve this goal requires an original, creative game. If students want to become innovative designers, then there is a wave of Effect. Teachers must follow their example and master the new role of teacher in relation to design thinking. The learner as a globally connected citizen. Viewing students as part of the larger world is not new idea. However, digital reach, which provides immediate access to the world, is new – and strikingly personal, given the ability for real-time video communication between people. Become an active and engaged citizen means being responsible and informed in the global scale, with an understanding of problems and issues that transcend boundaries and are just as basic, like the economy, political interactions, climate, and resources.

We define "global" competence" as "the ability and disposition to understand and act on global issues." We offer an overview of the development of four global competencies that support new pedagogy. Students can and will do the following:

1. Explore the world beyond their immediate environment, creating serious challenges and by conducting well-designed and age-appropriate explorations.
2. Acknowledge perspectives, others' and one's own, by articulating and explaining such perspectives thoughtfully and respectfully.
3. Effectively share ideas with diverse audiences across geographic, linguistic, ideological and cultural barriers.
4. Take action to improve conditions by viewing ourselves as players in the world and participating in reflections [9, p. eleven].

The development of these capabilities is possible at an unprecedented level as students receive the ability to conduct online research, participate in point-to-point communication via Skype or Google and View satellite images via Google Earth. Teachers should help them become responsible and respectful global citizens as they develop the four competencies, leading to meaningful action and contribution. Most global problems can be localized – and learning about the world can begin in the classroom.

CONCLUSIONS

The proposed roles of the modern teacher and student raise many questions in the area practical application. Even the most innovative and ideological teacher does not work in a vacuum. So what are the implications for schools as educational organizations with open opportunities? Will they be able to they become independent, socially oriented, media savvy information, innovation, and mastery of globally connected institutions? This pedagogical theory requires deep, but not lengthy, study and broad discussion in practice pedagogical community.

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FORMATION OF NATIONAL IDENTITY OF FUTURE TEACHERS IN A CROSS-CULTURAL COMPETENCE-ORIENTED ENVIRONMENT

Venera Sarbassova[1]

ABSTRACT

Modern educational trends necessarily raise the question of revising approaches to the professional training of future teachers, which is carried out in the holistic pedagogical process of the university. The holistic pedagogical process in the context of the study is considered within the framework of multiculturalism as a cross-cultural competency-oriented environment. A cross-cultural competency-oriented environment as the main factor in the adaptation of future teachers to new sociocultural realities creates conditions for the development of national self-awareness as professional competence, cross-cultural literacy, intercultural competence, and competencies in the field of multiculturalism.

***Keywords**:* National identity, cross-cultural competency-oriented environment, intercultural interaction, dialogue

In modern anthropological conditions, a rethinking of the value-semantic sphere has occurred in the psychological state of people; consciousness and its subsystems are at the center of the transformation. The value of human life, as something taken for granted, today takes on a different meaning. In conditions of uncertainty and fear of the future, issues of awareness of belonging to the human race, ethnic community, social significance and social responsibility of everyone come to the fore. According to K. Liebkind: “Only extreme social situations, such as military battles, temporarily eliminate all identities except one, the most important” (Liebkind, K. (1984). Transformation of a person's national self-awareness as the most important characteristic of consciousness that determines our goals and actions can prevent existential and other catastrophes.

Scientific interest in the study of the problem of national self-awareness of an individual is presented mainly in the socio-philosophical aspect, while the educational process of professional training of teachers requires, first of all, a scientific and pedagogical foundation. Despite the observed increased interest in the problem, there is not enough research examining the personality of the teacher as a bearer of national identity and a professional fulfilling the social order of training young people in the spirit of citizenship, patriotism, tolerance and multiculturalism. A special role in the formation of a person’s national self-awareness belongs to the education system. It is obvious that only a teacher with a sufficient level of national self-awareness can transmit a national consolidating idea to future generations. In the pedagogical science of Kazakhstan and the CIS countries, there are enough studies examining individual components of the national self-awareness of the future teacher. Tolerance, patriotism, and citizenship are presented by researchers as professionally important qualities of a future teacher. In particular, tolerance as:

- the integrative quality of personality is represented by interdependent and complementary components of the cognitive, affective, and behavioural spheres (A.I. Bogdanova, 2015, p. 221);

- a professionally important quality of future social educators, different from tolerance, manifested in a positive attitude towards participants in the educational process (Seidina M. Z, Menlibekova G. Zh, 2018, p. 175);

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The research scientifically substantiates the development and application of various methods, means and forms of developing individual personality traits of a future teacher:

- interactive methods of teaching and upbringing in the educational process of a university (Formation of citizenship of students in the educational process of a pedagogical university (Shapirova R. R.);

- a binary model for structuring the ethnic component in the content of higher pedagogical education (Mukhtarov, 2006).

Thus, tolerance, patriotism, and citizenship are considered by researchers in isolation, in isolation from professional training. The problem of studying the national identity of young people in most CIS countries is considered within the framework of multicultural education. An objective perception of multicultural reality and a statement of the presence of ethnocultural differences determines the formation of the personality of a future teacher who is ready for intercultural interaction and constructive dialogue, the development of emotional intelligence and openness of consciousness. The interaction of subjects of the educational process with a mixed ethnocultural composition necessarily raises the question of its specificity in the content, goals, forms and methods of training and education, and the results of professional training.

The formation of the national self-awareness of future teachers was carried out within the framework of a comprehensive program that included classroom (special course) and extracurricular types of work, joint projects with youth organizations, practice-oriented trainings on the development of “I-concepts”, and seminars. The main objectives of extracurricular work are to improve communication and professional competencies. The development of national and universal cultures by young people, the development of respect for their native language, and a tolerant attitude towards members of other ethnic communities is impossible without the professional training of a teacher with a positive level of national self-awareness. Professional training of a teacher needs to be enriched with the results of scientific research in the field of formation of national self-awareness of children and youth.

Improving the professional training of future teachers as a social system expands the essence of the concept of “educational environment”, the nature of the interaction of such components as the ethnic component, multiculturalism, multilingualism and professional competence changes. In the context of our research, we consider the holistic pedagogical process of a university within the framework of multiculturalism as a cross-cultural competence-oriented environment. The cross-cultural (from the English cross - “intersection” of cultures) nature of the educational environment is determined by the interaction of subjects with different ethnic compositions. The main feature of a cross-cultural competency-oriented environment is its integrity. Integrity lies in preserving its fundamental components. The loss of something from the process leads to a violation of integrity and, as a result, problem solving becomes more difficult.

A cross-cultural competency-based environment has two components: cross-culturality and competency-based learning. The formation of a cross-cultural competency-oriented environment is based on the principles of implementing multicultural education based on the values of culture, dialogue, and a competency-based approach (defining the goals of education,

organizing the educational process and assessing educational results), ensuring openness of consciousness, constructive cooperation, and dialogicality. It is the cross-cultural competence-oriented environment that creates the conditions for the development of national self-awareness as professional competence, cross-cultural literacy, intercultural competence, and competencies in the field of multiculturalism. Within the framework of competency-based training, professional competence is formed on the basis of practical experience. Thus, a cross-cultural competency-oriented environment is the main factor in the adaptation of future teachers to new sociocultural realities (Sarbasova, 2023, p. 30).

Research methods. Analysis of psychological and pedagogical literature indicates insufficient development of scientifically based diagnostic tools. The specificity, multi-aspect nature of the phenomenon of "national self-awareness of the individual", the lack of research in the aspect of our research raises the question of methods for empirical research of this phenomenon. The main difficulties are associated with the terminology of the phenomenon and discrepancies in the structure of a person's national self-awareness. It is necessary to develop original research methods and modify existing ones (Sarbasova, 2020, p. 90). The set of empirical study methods included: the Types of Ethnic Identity methodology (G.U. Soldatova, S.V. Ryzhova), a questionnaire to study the associative connections of respondents in the field of formation of national identity (V.P. Tarantey, V.N. Sarbasova), essay, modified "Unfinished Sentences" technique.

The content and direction of the formation of the national self-awareness of future teachers as professional competence depends on the starting points, i.e., principles. Principles for the formation of national self-awareness of future teachers as professional competence.

1. The principle of human conformity. Provision of the Bologna Declaration on the recognition of the priority of man and humanity in the system of professional training. Cultivating the uniqueness and originality of each individual.
2. The principle of orientation towards national and universal values. It is spiritual values that act as a kind of code that determines the success/failure of processes that expand the boundaries of the cultural identification of a people, a nation, the strengthening, or destruction of national identity.
3. The principle of implementing cross-cultural education based on the values of culture, dialogue and the idea of tolerance as diversity.
4. Principles for implementing the competency-based approach (defining the goals of education, organizing the educational process, and assessing educational results).

The implementation of the principles of forming the national self-awareness of the future teacher involves the inclusion of organizational and pedagogical conditions in the content in a cross-cultural, competency-oriented environment. In order to substantiate the organizational and pedagogical conditions for the formation of the national self-awareness of future teachers, we will consider the concepts of "conditions" and "pedagogical conditions". In philosophy, the concept of "condition" is "that on which something else depends (conditioned); an essential component of a complex of objects (things, their states, interactions), from the presence of which the existence of a given phenomenon necessarily follows."

Berezhnaya I.F. considers “conditions” as purposeful created circumstances (Berezhnaya, 2009, p. 10). N.V. Ippolitova, N.V. Sterkhova consider pedagogical conditions as “... one of the components of the pedagogical system, reflecting the totality of the possibilities of the educational and material-spatial environment, affecting the personal and procedural aspects of this system and ensuring its effective functioning and development "(Ippolitova, Sterkhova, 2012, p. 11). According to V.I. Andreeva, pedagogical conditions are “... the result of targeted selection, design and application of content elements, methods (techniques), as well as organizational forms of training to achieve goals” (Andreeva, 2003, p. 124).

Generalization of the above allowed us to draw the following conclusions:

- organizational and pedagogical conditions as a component and result of an integral pedagogical process affect the effectiveness of achieving goals;

- organizational and pedagogical conditions in the context of our study are targeted and necessary measures of the holistic pedagogical process, the observance of which ensures the development of a high level of national self-awareness of future teachers.

The process of forming the national self-awareness of future teachers will be effective if the following organizational and pedagogical conditions are met:

- optimization of a cross-cultural competency-oriented environment;

- in a cross-cultural, competency-oriented environment, a certain system of interaction has been created between the two main subjects of the holistic pedagogical process - teachers and students;

- to diagnose the level of formation of national self-awareness of future teachers, tools tested in science and practice are used;

- integral teachers are key competencies as a means of goal setting and diagnostics of the level of national self-awareness of future teachers;

- scientific and methodological training of teachers to carry out activities to form the national self-awareness of future teachers is provided.

The formation of the national self-awareness of future teachers is a long and complex process aimed at enriching knowledge about the culture, history, traditions, and customs of the peoples of the world, cultivating a respectful attitude towards the values of other people, the ability to empathize, be able to communicate and cooperate with people of other views, orientations, and cultures. The future teacher will have to perform professional functions based on the concept of cross-cultural education at the present stage and its legal support, mastery of methods, technologies and methods of training and education in a cross-cultural environment. It is professional training that is key in the formation of the national self-awareness of future teachers in a cross-cultural competence-oriented environment. Culturological and competency-based approaches in a cross-cultural competency-oriented environment contribute to students’ awareness of the cultural landscape, tolerant perception of cultural values, and competencies of cross-cultural interaction.

Promising directions for studying the problems of national self-awareness of a teacher are comparative pedagogical studies of the national education systems of different countries, issues of the formation of national self-awareness as the dominant quality of a teacher in his professional pedagogical activities, the most important condition for his professionalism and competence.

Improving the regulatory framework in the formation of the national self-awareness of future teachers suggests the following as priority areas of scientific research:

a) research into pedagogical problems in the formation of national self-awareness of future teachers;

b) development of modern approaches to the study of the phenomenon of national self-awareness of an individual;

c) cooperation, coordination and integration of the efforts of all public associations and youth organizations on the problems of forming the national identity of university graduates.

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AN INVESTIGATION OF PRE-SERVICE TEACHERS' MOTIVATION FOR CHOOSING A TEACHING CAREER

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ABSTRACT

Pre-service teachers' career choice motivations moderate their participation in the teacher training programs, their attitudes towards teaching and learning, their teaching competencies, implication, and enthusiasm in teaching as well. An investigation of pre-service teachers' career motivations, expectations and perceptions of their future profession could be very informative for designing successful teacher training programs. This study aims to investigate the main motivational factors that guided career option in a sample of 160 preschool/primary school pre-service teachers, using an adapted version of the FIT-Choice Scale (Watt & Richardson, 2007). The implications of the results for implementing efficient teacher training activities are discussed.

Keywords: Pre-service teachers, motivation, FIT-Choice Scale

EXTENDED ABSTRACT

Theoretical background

Teacher shortage and teacher professional competence are global problems and widespread concerns of educational experts and policy makers around the world, both in developed and developing countries (UNESCO, 2016; Siostrom, Mills, & Bourke, 2023). Motivation is an important predictor for career choice and teachers' remaining in profession, for their professional competence, personal involvement and efficacy in teaching, job satisfaction and well-being. Teachers' motivation has a significant influence on classroom atmosphere, communication, students' motivation and on the quality of students' learning. According to a large body of research, teachers' professional competence has both cognitive and affective-motivational components (Baumert & Kunter, 2013; Guerriero, 2017; Watt & Richardson, 2007). For example, according to the COACTIV Model (Baumert & Kunter, 2013) the main components of teachers' professional competence are: professional knowledge (content knowledge, pedagogical content knowledge, pedagogical/psychological knowledge, organizational knowledge, counseling knowledge), beliefs/values/goals, motivational orientations and self-regulation. Statistical data indicate a "motivational crisis", materialized in significant attrition rates of teachers in most European countries (OECD, 2021).

Questioning the students in preschool/primary education from the University of Alba Iulia, about their motivation for choosing a teaching career, they usually indicate intrinsic affective reasons such as loving children or the pleasure to work with children. Willing to perform an in-depth analysis of their motivation I applied the FIT-Choice scale, an instrument which generally displayed a good construct validity and reliability across groups from different countries/cultural contexts (Watt & Richardson, 2007; 2012). The framework of the FIT-Choice scale is the FIT-Choice model, constructed by the two authors (Watt & Richardson, 2007; 2012), after multiple factor analysis, starting from the Expectancy-Value Theory of motivation (Eccles et al., 1983). The factors of the FIT-Choice model are presented in Figure 1.

[1] "1 Decembrie 1918" University of Alba Iulia

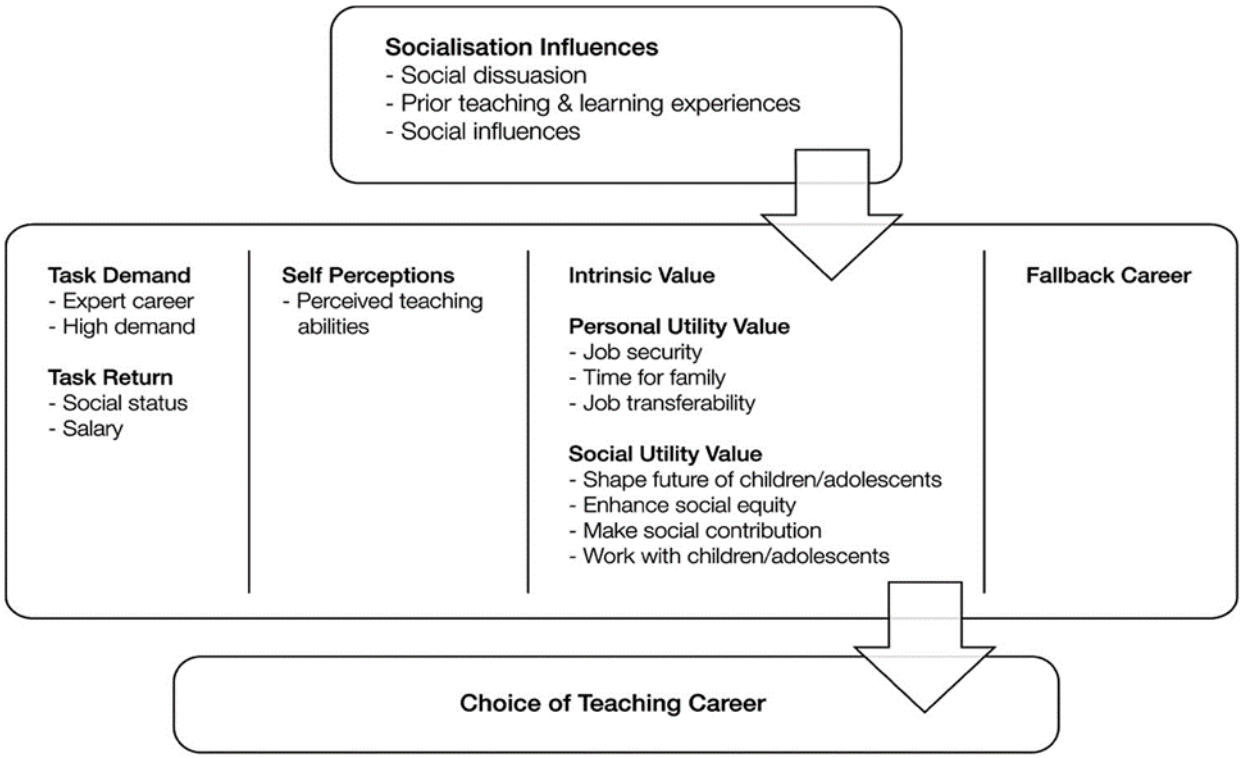

Figure 1. The FIT-Choice model [Source: Watt, H. & Richardson, P. (2012). An introduction to teaching motivations in different countries: comparisons using the FIT-Choice scale, Asia-Pacific Journal of Teacher Education, 40(3), p. 187].

Aim of the study

The aim of this study is to investigate the pre-service teachers' motivation for choosing teaching as a career.

Participants

160 pre-service teachers/students in preschool/primary school education from the "1 Decembrie 1918" University of Alba Iulia participated in this study. They were selected on a voluntary basis and were at different stages of their teaching education. They were all girls with ages between 18 and 25 years.

Instrument

The FIT-Choice Scale measures a range of motivational factors/constructs and perception of the teaching profession. The motivational factors are: socialization influences (social dissuasion, prior teaching & learning experiences, social influence), self-perceptions (perceived teaching abilities), intrinsic career value (personal utility value: job security, time for family, job transferability and social utility value: shape the future of children/adolescents, enhance social equity, make social contribution, and work with children/adolescents). The perception of the teaching profession includes perceived task demand (expertise and difficulty) and task return (social status and salary). The maladaptive motivation of choosing teaching as a fallback is also investigated. The FIT-Choice scale has been translated from English to Romanian and from Romanian to English by a team of researchers and after it was administered to a sample of pre-service teachers, studying for an English major. The job transferability subscale has been

excluded from the adapted Romanian version because it has been considered irrelevant/not-applicable.

Results

The results indicate that the most important motivational constructs for choosing teaching as a career in the studied group are – in this order: intrinsic/social utility value, intrinsic/personal utility value, self-perception/perceived teaching abilities, social influences.

Discussions

The implications of the results for implementing efficient teacher training activities that could contribute to the increasing of pre-service teachers' job satisfaction are discussed in the paper.

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THE RELATIONSHIP BETWEEN TEACHERS' LATERAL THINKING TENDENCIES AND THEIR ADOPTED STYLE OF CLASSROOM MANAGEMENT [1]

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ABSTRACT

Individuals' way of thinking can affect their attitudes and behaviors. Thinking is defined as the free and unique action of the mind, examining the work of memory and events by making itself the subject of knowledge. Thinking can occur in different ways such as linear thinking, analytical thinking, critical thinking, and lateral thinking. Lateral thinking is a way of thinking formulated by DeBono. Although thinking is predominantly a cognitive action of the individual, there are also affective and psycho-motor dimensions in the attitudes that shape behavior. Teachers' thinking styles are expected to be affected by classroom management practices. Considering classroom management as a reflection of the teacher's classroom practices on the student, determining the relationship between teachers' thinking tendencies and the classroom management styles they adopt can provide important clues to teachers in terms of education. For this reason, the aim of this research was determined to examine the relationship between teachers' lateral thinking tendencies and the classroom management styles they adopt. Since the data for this research will be collected and analyzed with the Lateral Thinking Tendency and Classroom Management Styles scales from teachers working in public schools in Pendik and Tuzla districts on the Anatolian side of Istanbul, this research is quantitative research in the relational scanning model, one of the scanning models. The data collection process continues. The data obtained will be analyzed using descriptive statistical analysis techniques and presented and interpreted in tables.

Keywords: Thinking, lateral thinking, classroom management

INTRODUCTION

Thinking; It is a mental process that occurs through symbols such as concepts, ideas, and actions that individuals acquire in the process of acquiring knowledge (Cevizci, 2000, p.297). Thinking tendencies are mental activities used to solve problems, establish connections between events, develop new ideas and reach results. Lateral thinking is based on the principle of solving this problem in various ways when faced with a problem (Yıldız, Yılmaz, 2020). It is a multifaceted concept that includes the arrangement of the physical environment in the classroom, the establishment of classroom rules, the development of effective relationships, the prevention of negative attitudes and behaviors, and the attitudes and approaches to be applied against the exhibited behaviors (Garret, 2008, p. 35). Classroom management styles are discussed under four main headings: preventive, developmental, reactive, and holistic approach. Teaching can be considered among the most inclusive and important professions. Teachers' classroom practices can have profound effects on students. For this reason, teachers' ways of thinking and classroom management practices based on these are becoming more important. Thinking is predominantly a mental process. Lateral thinking, one of the thinking tendencies, is a creative thinking skill. Lateral thinking is a thinking skill that does not have a single dimension but produces many ways (Onargan et al., 2004; cited in Yıldız, Yılmaz, 2020). Just as lateral thinking has an impact on many areas, it is also expected to have an impact on classroom management. Because people act and apply practices according to their thoughts and attitudes

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based on them. Lateral thinking is related to the behavior of direct mental transfer of information. Lateral thinking is a way of using attitude and knowledge (De Bono, 1977). Institutions have important duties in developing lateral thinking through education. Giving individuals lateral thinking skills is important in terms of analyzing and evaluating problems. Educational institutions, as well as the family, have a great responsibility in raising this awareness. A person's awareness and perception of what is happening around him creates consciousness (Şimşek, 2014).

Knowing teachers' lateral thinking tendencies and determining the relationship between thinking tendencies and classroom management styles can provide important clues to teachers in classroom practices. In addition, determining this relationship can guide decision makers about what kind of program is needed for pre-service and in-service training for teachers. In this context, it is considered important to know the classroom management styles adopted by the teacher, which forms the basis of classroom practices. For this purpose, teachers' lateral thinking tendencies and the classroom management styles they adopt constitute the purpose of the research. The study group of the research consists of teachers working in Pendik and Tuzla districts on the Anatolian Side of Istanbul. The research was designed using the relational screening method, one of the quantitative methods, in accordance with the purpose. Since the data collection process of the research continues, the findings will be presented during the congress.

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SOCIO-SCIENTIFIC ISSUES IN THE COGNITIVE STRUCTURE OF CLASSROOM TEACHERS: MIND MAP EXAMPLE

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Gökhan Hastürk[2]

ABSTRACT

Socio-scientific issues are characterized as complex, contradictory, without a single answer, open to debate and often inconclusive. In this context; artificial intelligence, stem cells, cloning, genetically modified organisms, nuclear power plants, biotechnology, global warming, hydroelectric power plants, vaccination, global warming, euthanasia, surrogate motherhood and organ transplantation are socioscientific issues. In this study, it was aimed to reveal the cognitive structure, concepts, connections between concepts, i.e. the knowledge network of classroom teachers about socioscientific issues. The study group of the research consists of 26 classroom teachers working in a city center in the Central Black Sea region in the 2022-2023 academic year. Phenomenology design, one of the qualitative research designs, was adopted in the study. The problem statement of the study was determined as "How are teachers' mental structures about socioscientific issues?". The data obtained were analyzed by content analysis method, expressions were coded, similar expressions and categories were identified. As a result of the study, it was concluded that teachers have a wide range of knowledge about SSI and can analyze SSI from positive and negative perspectives. In addition, it was determined that teachers associated SSI with very important and interrelated issues such as stem cells, genetically modified organisms, surrogate motherhood, cloning, nuclear power plants. In this study, the cognitive structure of teachers was revealed by analyzing the sub-dimensions, positive and negative aspects of SSI.

Keywords: Socio-scientific issues, Mind Map, Classroom teachers

INTRODUCTION

In recent years, scientific and technological studies and the possible risks of these studies have necessitated the use of socioscientific issues in education. Socioscientific issues are described as dilemmas related to the environment, health, science and technology, which are related to daily life, which people need to make decisions, which concern society and science, which involve moral and ethical concerns (Sadler, 2004). For an issue to be a socioscientific issue, at least two important criteria must be met.

i. That the topic is related to science,
ii. It should be a socially important issue (Eastwood, Sadler, Zeidler, Lewis, Amiri, & Applebaum, 2012).

These topics address complex and often controversial issues by examining the interactions of science, technology and society. Socioscientific issues help students develop scientific literacy and critical thinking skills, as well as encourage them to become informed and responsible citizens with regard to societal decisions. Socioscientific issues include stem cells, cloning, genetically modified organisms, nuclear power plants, euthanasia, surrogacy and vaccines. Examining, researching and discussing these issues in educational settings is very important for individuals to establish the link between science and society.

Purpose of the Study

This study, which was designed to examine the cognitive domain of individuals regarding SSI, aims to contribute to the literature in terms of addressing more than one socioscientific issue at

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the same time, sample group and determination of mental structures. The problem statement of the study was determined as "How are teachers' cognitive structures related to socioscientific issues?".

METHOD

Research Model

In this study, which aimed to examine the mental structures of classroom teachers regarding socioscientific issues, a case study was used as one of the qualitative data collection and analysis methods. The sample of the study consisted of 26 classroom teachers working in a provincial center in the Central Black Sea region.

Data Collection Tools and Data Collection Process

Mind maps were used as a data collection tool in the study. Mind maps were developed by Tony Buzan as a note-taking technique in the late 1960s and in recent years they have become prominent visual tools with different features such as creativity, increasing retention, enabling effective learning and helping students to reveal their prior knowledge.

Data Analysis

In the study, "content analysis was used among the two data analysis processes (descriptive and content analysis) suggested by Strauss and Corbin (1990)" (Yıldırım & Şimşek, 2005: 221). Yıldırım and Şimşek (2005: 228) stated that content analysis to be used in the processing of qualitative research data collected through interviews, observations or documents can be carried out in four stages. These stages are listed as follows:

1. Coding the data
2. Finding themes/categories
3. Organization of codes and themes
4. Description and interpretation of findings

For this reason, while conducting content analysis in the study, the expressions obtained from the mind maps drawn by the pre-service teachers were coded and similar expressions and categories were identified. An expert review was conducted with a field educator working in the same faculty in order to determine whether the codes and categories agreed upon for the reliability of the research, that is, whether the problems expressed represent the categories in question. Then, the matchings made by the expert and the categories created by the researcher were compared. The reliability of the study was calculated using Miles and Huberman's (1994: 64) formula (Agreement / Agreement + Disagreement x 100) by determining the numbers of agreement and disagreement in the comparisons.

In the study, the agreement between the expert and researcher evaluations was found to be 0.93.

In qualitative research, a desired level of reliability is achieved when the agreement between expert and researcher evaluations is 90% and above (Saban, 2009).

FINDINGS

The main problem of the study was "Which are the most common socio-scientific issues reflected in the mind maps of classroom teachers? Table 1 shows the frequencies and percentages of the most common SSI's expressed in the mind maps drawn by the classroom teachers participating in the study.

Table1. Frequencies and percentages of SSIs expressed in classroom teachers' mind maps

Socio-scientific issues	f	%	Total
Nuclear Power Plants	23	92	25
Artificial Intelligence	17	68	25
Organ Transplant	10	40	25
Genetically Modified Organisms	8	32	25
Vaccine	5	20	25
Cloning	5	20	25
Surrogate Motherhood	3	12	25
Euthanasia	3	12	25
Zero waste	1	8	25
Abortion	1	8	25
Hydroelectric power plant	1	8	25

When Table 1 is analyzed, it can be seen that a total of 11 different SSIs were expressed in the mind maps created by the teachers participating in the study. It is seen that the most frequently used SSI in the mind maps drawn by the teachers are "nuclear power plants" and artificial intelligence. This is followed by organ transplantation and genetically modified organisms.

CONCLUSION AND SUGGESTIONS

As a result of the study, there are a total of 11 SSIs in teachers' mind maps. The most important SSI in teachers' mind maps is nuclear power plants. Artificial intelligence, organ transplantation and cloning are the next most important SSI topics. Teachers expressed their understanding of artificial intelligence by including different dimensions in their socio-scientific models. In this context, the cognitive structure of the teachers was revealed by analyzing the sub-dimensions, positive and negative aspects of SSI.

Utilizing the mind mapping technique in teaching SBK contributes significantly to individuals' realizing and understanding the interaction between science and society, developing an understanding of the content of science and how science works as a scientist, understanding social problems in the context of daily life problems, concretizing ideas or abstract concepts, developing expression skills and understanding the nature of science, and developing science literacy (Gobert & Buckley, 2000; Hazen & Trefil, 2009; Lehrer & Schauble, 2006).

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INVESTIGATION OF SECONDARY SCHOOL MATHEMATICS TEACHERS' OPINIONS ON THE QUESTIONS BOOK USED AS A SUPPLEMENTARY SOURCE

Mehmet Gülburnu
Umut Özcan

ABSTRACT

This study aims to reveal the opinions of secondary school mathematics teachers about the study questions book. This study, in which the special case method was used, was carried out with eight mathematics teachers working in secondary schools in the Mediterranean Region. In the study in which purposive sampling was preferred, a semi-structured interview form consisting of open-ended questions was used as a data collection tool. The data were recorded with the help of a voice recorder and by taking notes during the interview. The opinions of teachers about the study questions book were gathered under three main themes: teaching, management, and evaluation. Teachers stated that the study questions book prepared the ground for permanent learning at every grade level. In addition, they stated that they provide equal opportunities and contribute positively to the classroom atmosphere. However, they stated that they adopted a result-oriented evaluation and they found it insufficient in terms of process evaluation. Although this situation does not pose a problem, especially for eighth graders, it creates a disadvantage for students at other levels. In addition, secondary school mathematics teachers stated that the questions in the worksheets should be constantly updated and associated with daily life.

Keywords: Secondary school mathematics teachers, questions book, teacher opinions

INTRODUCTION

In mathematics teaching, the teaching tools referenced and used are as important as the field and pedagogical variables. As a matter of fact, books can be considered as a teaching tool that greatly affects and directs classroom teaching, as well as being a concrete reflection of the abstract goals of a curriculum. In this context, books, which have an important place among educational tools, are expected to be of appropriate quality (Seçken, Yılmaz and Morgil, 1998). Because we can say that books are considered the primary source in terms of learning/teaching mathematics. Recently, especially study question books have become among the materials used as primary sources in mathematics teaching.

The study question books that have started to take a common place in mathematics teaching; It is important to learn how often it is used at the grade level, its effects on learning/teaching, for what purpose and at what stage of the lesson it is used, and whether it is beneficial in terms of classroom management or not, in terms of the quality of the teaching provided. The aim of this study is to reveal the opinions of secondary school mathematics teachers about the study questions book.

METHOD

The case study method was used in this study, which was conducted with eight mathematics teachers working in different secondary schools in a province in the Mediterranean Region. Case study, which is a qualitative research method, allows an in-depth examination of an aspect of the subject under investigation and aims to illuminate some general theories. In addition, an explanatory case study was preferred in this study to provide information about the situation, to make unfamiliar situations familiar, and to explain the connections with real life situations.

Data Collection

A semi-structured interview form consisting of open-ended questions was used as a data collection tool in the study. In this context, a semi-structured interview form consisting of 5

questions was prepared by the researchers, whose validity study was conducted. For the validity study, the interview form was prepared in the form of 8 items by discussing with the teachers before the application. Later, the created form was evaluated under expert opinion, and the items that did not have content validity and were difficult to understand were eliminated and reduced to 5 items. The data was supported by recording with the help of a voice recorder and by taking notes during the interview.

Items Included in the Interview Form

1.) How often and for what purpose do you use the Study Questions book?

2.) Do you find the Study Questions book sufficient in terms of content? From where?

3.) Do you use any supplementary book(s) other than the Study Questions book? From where?

4.) If you were on the committee that prepared the Study Questions book, what would you pay attention to while preparing the book?

5.) What can be done differently about using the Study Questions book?

Analysis of Data

The data obtained was content analyzed and coded in line with the purpose of the study and presented under certain themes. Content analysis is a technique in which inferences are made to recognize certain features of the data in an objective and systematic way. It is done to determine the presence of certain words or concepts in a set of texts. Researchers determine and analyze the existence, meanings and relationships of these words and concepts and make inferences about the message in the texts.

FINDINGS AND INTERPRETATION

The opinions of secondary school mathematics teachers about the study questions book were collected under three main themes: teaching, management, and evaluation. Codes related to the teaching theme; It is interesting, has rich content, is used at every stage of the course, is more useful and should be associated with daily life. When the findings regarding the teaching theme were examined, all teachers stated that the workbook was useful. They also emphasized that most of them were interesting and full of rich content. However, teachers stated that the workbook was weak in associating it with daily life and was inadequate in this regard.

Codes related to the management theme; There are different and more questions, more time is required, it provides equal opportunities and positively affects the classroom atmosphere. When the findings of the management theme were examined, all the teachers stated that the workbook was effective in providing equal opportunities. They also emphasized that most of them had a positive impact on the classroom atmosphere. However, teachers stated that they needed more time because the workbook contained different and many questions. Codes determined regarding the evaluation theme; provides permanent learning, constantly updated and result-oriented teaching. When the findings of the evaluation theme were examined, all the teachers stated that the workbook adopted a result-oriented teaching and did not include process-oriented teaching. In addition, the majority of them emphasized that workbooks are effective in

providing permanent learning. However, teachers stated that it was difficult to continue the workbook in this form and that it needed to be constantly updated.

CONCLUSION, DISCUSSION, AND RECOMMENDATIONS

Teachers stated that the mathematics study questions book paves the way for permanent learning at the eighth-grade level. However, they stated that it provides equal opportunity and contributes positively to the classroom atmosphere. As a matter of fact, in the literature, it is stated that auxiliary resources are necessary for central exams, auxiliary resources are more liked by students, auxiliary resources are more interesting, subjects are discussed more simply and concisely in auxiliary resources, these resources provide the opportunity to do more activities, and there are more opportunities in these resources. It was determined that they stated that there were questions, that auxiliary resources relieved the boringness of textbooks, and that auxiliary resources were of higher quality and useful (Taş and Minaz, 2018). However, teachers stated that the mathematics workbook adopted a result-oriented evaluation and found it inadequate in terms of process evaluation. Considering the approach adopted regarding measurement evaluation in the mathematics curriculum (Ministry of Education, 2018), it is obvious that the process-oriented attitude of the workbooks will make teaching more effective. Otherwise, although this situation does not pose a problem especially for eighth graders, it may create a disadvantage for students in other grades in terms of boredom and distraction from the course. This study was conducted specifically for the 8th grade mathematics workbook. The research topic can be applied at different levels/branches by keeping the sample wide. In addition, the reasons for the situations detected in the research can be examined through different studies and contribute to the field.

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CHALLENGES AND SOLUTIONS IN THE DIGITIZATION OF DISTANCE EDUCATION

Tuychieva Nodira[1]

ABSTRACT

Currently, quality education is becoming one of the global problems of the world. Education is the future for us. In this article, today's digital innovative technologies in the field of education and how quickly they became popular, their educational benefits, and their future explained. About the MOOC e-learning system and the concept of STEAM education information is shown. Also, the opinions of scientists from different countries on the digitization of distance education were studied.

***Keywords*:** Digitalization, methods, information technologies, STEAM, interactive, innovations

Through the use of computer and communication technology, distance learning is a type of instruction that allows students and instructors to connect interactively with information network resources at various training phases.

Distance education entails:

-ways to give the pupil instructional materials;

-ways to keep track of students' development;

-methods for consulting with students;

-methods of interactive student-teacher engagement, but with fresh knowledge.

The main way that educational technologies are used in distant education is through the interaction between students and teachers, either directly or indirectly, through information and communication technology. Because of the intense rivalry in today's work market, knowledge, skills, and experience are extremely crucial. A person who is proficient in contemporary information technologies and consistently seeks to advance his professional standing is considered an expert in the twenty-first century. Gaining new knowledge and abilities that are applicable to the workplace in the information age greatly increases one's potential for self-actualization. The COVID-19 epidemic has presented a further obstacle for the educational system. Universities today are searching for solutions to the question of whether they are prepared to set up the educational process in light of the impending end of in-person instruction with students and the shift to distant learning.

Naturally, all colleges employed remote work methods for instructional and research purposes even prior to the epidemic. This is because, in the era of Internet technology, a lot of our daily activities are moved online, speeding up the information society's development and erasing boundaries based on location. Complete and comprehensive learning is made possible by the educational Internet environment. Before the pandemic, however, distant learning was only thought to be feasible and, without other options, not widely used. After examining how institutions operate under self-isolation, we may draw the conclusion that there are advantages and disadvantages to remote learning. One benefit of attending classes remotely is flexibility, which allows for the presentation of information while accounting for students' prior knowledge.

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-relevance- the ability to provide the most recent advancements, practicality;

-the freedom to study whenever it's convenient, wherever it is, and without having to finish a course in a set amount of time;

-modularity is the division of the content into distinct, functionally complete subjects that are studied in accordance with each student's or group's skills and according to the level of mastery;

-the capacity to make use of a lot of instructional stuff and knowledge at once; interactivity: the instructor and pupils' active communication;

-empowerment: manage the caliber of instruction and conversation, talks;

-use of self-control.

-lack of psychological obstacles;

-and geographic restrictions on schooling.

Most colleges arrange their educational programs in a remote mode. Attendance among students has increased. Student engagement and activity, which are linked to a novel model for planning an educational process that proved to be unique, fascinating, and at the same time recognizable to students from the digital era. Despite the administration of many universities' previously acknowledged expertise in doing so earlier, all institutions have just recently, under dire circumstances, shifted to distant learning instruction. Developed into a much more practical and royal competency-based strategy, it matters more what you can do than what you know. In addition to quickly gaining proficiency with new platforms and tools for managing the educational process, the teaching staff and instructors also had to acquire information and communication abilities.

The work of universities is done remotely in two ways: first, managers at various levels (rectors, vice-rectors, directors of academies, institutes, deans of faculties, heads of departments, heads of departments, etc.) gain experience in managing remotely in uncertain situations and develop new competencies; second, departments gain experience managing remotely, and the university as a whole gains that expertise. Thus, via the development of an electronic learning environment, the structuring of the educational process in a remote format helps to improve the information and communication competency of faculty members and students at universities. Information and communication technologies are only one of the structural elements of the system, which is distance learning.

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KEYNOTE SPEAKERS

ARTS INTEGRATION: STEAM LEARNING

Kathy Cabe Trundle[1]

ABSTRACT

One way to enhance young learners' natural propensity for wonder and interest in the Science Technology Engineering and Mathematics (STEM) disciplines is to integrate the arts. Combining arts with STEM builds on children's interests in nature while allowing them the joy of artistic expression. Although educators often discuss integrating the arts, empirical support is relatively recent. This keynote address includes a definition of the arts, a description, and examples of types of arts, an overview of a STEAM curriculum designed for preschool, and the results of two STEAM research studies. The first study (Green et al., 2017) synthesizes previous empirical studies published on arts integration and identifies benefits of arts integration, which include academic outcomes, positive learning environments, and increased teacher collaboration. The second study (Saçkes et al., 2019) examines the effect of a STEAM curriculum on preschool children's science learning. The results of this study included significant improvement in children's science scores from pre to post assessment, with a medium effect size. The results also indicated that girls likely benefited more from the STEAM curriculum than the boys. Although both boys and girls demonstrated improvements in their science scores, the girls made greater gains.

Keywords: Arts integration, STEAM learning

CUMHURİYETİN 100. YILINDA ÖĞRETMEN EĞİTİMİ POLİTİKALARI

Erdal Toprakçı[1]

Gerek Türkiye gerekse genel olarak dünya eğitiminin ve özel olarak öğretmen yetiştirmenin tarihinde yolculuk yapmak kolay değildir. Zira insan öğesinin kanıtları koruma oranında gerçeğe yaklaşılabileceği ortadadır. Bu bağlamda eğitimi yazının icadından önceki zamanlara, Tarih biliminin çağları temelinde, götürmek nasıl mümkünse; öğretmenliğin bu süreçte nasıl evrildiğini açıklamak da bir o kadar mümkündür. Buna göre ne zaman ki en az iki kişi olarak yaşamaya başladıysa insanoğlu öğretmenlik de o zaman doğdu denilebilir. Sonra doğan ilk çocukla birlikte eğer anne yaşıyorsa ilk öğretmenin anne olduğu babanın ve diğerlerinin seçmeli derslere girdiği söylenebilir. Çocuğun cinsiyetine paralel örneğin erkekse ilkokulun sonu ile liseye kadar olan zamanların babanın branş öğretmenliği temelinde ***hayatın bilgisinin*** erkek çocuğa verildiği, eğer kız ise annenin branş öğretmenliğinde olunduğu ve duruma göre babanın ya da annenin seçmeli derslere girdiği söylenebilir. Sonra nüfus kalabalıklaşacak ve öğretmen ***usta*** olarak aranacaktır. Ardından daha bir kalabalıklaşacak söylentilerle değil ***belgelerle (diploma) kimin usta (öğretmen)*** olduğu anlaşılarak kabile, klan, bey, kilise vb. şeklindeki ortaçağ toplumsalının ***okulumsuları*** ortaya çıkacaktır. Yeni icatlar, keşiflerle ve savaşlarla sorun yaşayan insanların kendilerini korumak adına daha büyük topluluklar olarak bir araya gelmeleriyle şekillenen şehir devletleri, imparatorluklar ve en nihayetiyle ***devletler temelinde modern (yeniçağ) anlamıyla biçimlenen okullar ve yine bugünkü anlamına yakın öğretmenle*** karşılaşmak mümkün olmaktadır. Bu çalışmada söz konusu evrilişin Türk toplumu eksenli Osmanlı kısmının Tanzimat ve Meşrutiyetlerle biçimlenen okulumsulardaki öğretmen ve öğretmen yetiştirmelerinden söz edilerek, Cumhuriyetin **1921'de Ankara'da yapılan Maarif Kongresi, Heyet-i İlmiye** toplantıları, **Öğretim Birliği Yasası, Latin harflerinin kabul** edilmesi, Yüksek Köy Enstitüleri, Millî Eğitim Şuraları, Milli Eğitim ile ilgili yasal belgeler, darbelerle biçimlenen Anayasalar, hükümetler ve en son Yükseköğretim Kurulu inisiyatifi ile biçimlenen bugünkü öğretmen ve öğretmen yetiştirme politikalarına değinilmeye çalışılmıştır.

Bugün, YÖK'nun aldığı yeni bir kararla (YÖK, 2023) öğretmen yetiştirme ile ilgili devrede olan uygulamalar özetle şöyledir: Öğretmen yetiştiren fakülteler dışında formasyon eğitimi alınabilen alanlardaki fakültelerde bu alanlar için örgün eğitim ve öğretim süresi içinde (seçmeli dersler olarak üçüncü yarıyıldan itibaren) pedagojik formasyon eğitimi yüz yüze veya uzaktan verilmektedir. Öğretmenlik Mesleği Tezsiz Yüksek Lisans programları vardır ve onlar da öğretmen yetiştirilmektedir. Mezun öğrenciler için Pedagojik Formasyon Eğitimi Sertifika Programı uygulaması devam etmektedir. Görüldüğü gibi öğretmen yetiştirme politikamız hep başa sarmaktadır. Özellikle 2022-2023 eğitim ve öğretim döneminde formasyon derslerinin Lisans öğrenimi sırasında seçmeli ders olarak alınabilmesi için son sınıf (mezuniyet aşamasında olan) öğrencilerine olanak verilmesine uygulamanın üniversiteler tarafından belirlenmesine denilerek neredeyse birinci sınıflar hariç bütün üniversite öğrencilerinin formasyon alabilmesine olanak sağlanmış gözükmektedir. Bu durum eğitim fakülteleri bünyesindeki öğretim üyesi sayısı yetersizliğine binaen hem her fakültenin kendi hocalarıyla devam eden

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öğretmen yetiştirmeler hem de uzaktan öğretim asenkron yolla yetiştirilen öğretmenler anlamına gelmektedir.

Bugün itibariyle 1 250 000 civarı öğretmen adayı 2023-2024 eğitim öğretim yılının sonunda öğretmen olarak atanmayı bekliyor olacaktır. Bu arada ihtiyaç duyulan öğretmen sayısı ile ilgili branşlar bağlamlı bir istatistiği hiçbir zaman yayımlamayan Milli Eğitim Bakanlığı öğretmen atamalarına KPSS haricinde bir de Sözlü Sınav yapmaktadır. Sözlü sınavın nasıl yapıldığından, hakkaniyetine tartışmalar devam ededursun bu kadar kişinin nasıl sözlüye alınacağı da ayrı bir sorun olarak ortada durduğu muhakkaktır.

Çözümün odağı her şeyden önce eğitimin bir bilim olduğu ve öğretmenliğin uzmanlık gerektiren bir meslek olduğuna yediden yetmişe herkesin, sözde değil özde, inanması, inandırılması ile öğretmen yetiştirmede çok kaynaklılığın bitirilmesinden geçmektedir. Öte yandan öğretmen yetiştirmede geçmişten beri devam edegelen çok kaynaklılığın da bitirilmesi gerektiği ortadadır. Buna göre bir çözüm, eğitim fakülteleri tamamen lisansüstü bir hale dönüştürülerek fen ve diğer fakülte mezunlarından öğretmen olmak isteyen mezuniyet notu yüz üzerinden yetmişbeşin üzerindekilerin öğrencilerin sözlü/yazılı sınavlarla programa dahil edilmeleri yoluyla gerçekleştirilebilir. İkinci bir çözüm yolu ise eğitim fakültelerini, öğretmen ihtiyacı en fazla olan alanları bağlamlı, fen ve diğer fakülte mezunlarının asla dahil edilmeyeceği şekilde, güçlendirmektir. Yani örneğin fizik öğretmenliği programı her yönüyle güçlü bir biçimde eğitim fakültesinde olacak fen fakültesi öğrencisine formasyon ya da vb. bir yolla sertifika verilerek öğretmen yapılmayacaktır.

HOW CAN CHATGPT BE USED IN LANGUAGE TEACHING AND LEARNING?

Xiaojing Kou[1]

ABSTRACT

Based on results from a series of research (two published, two submitted) that the presenter participated on the topic of ChatGPT as it is used, tested, explained and critiqued by YouTubers teaching or learning world languages, the presenter has extensively and systematically tested ChatGPT around the various aspects of language teaching and learning on multiple languages. This presentation will introduce practical methods and techniques of using AI chatbot such as ChatGPT to facilitate teaching materials development and task designing for language instruction, discussing its strengths and limitations. Specifically, the presenter will demonstrate how to strategically and critically use AI chatbot to accomplish a range of instructional enhancement and learning support, including: generating customized text as reading materials, engaging students in self-directed intensive reading, efficiently developing additional learning materials to aid text comprehension (vocabulary and grammar), helping students prepare for and practice conversation, and improving writing process and product . In addition, the presenter will demonstrate prompts for generating ideas for classroom tasks and assignment, rubrics, and lesson plans. In addition, several alternative chatbot will also be introduced. The presenter will also discuss the relevance of self-directed learning and AI-literacy.

Keywords: AI, ChatGPT, language teaching and learning, self-directed learning, AI-literacy

On Dec. 5th, Tom Gally (retired professor from The University of Tokyo) published a YouTube video on the topic of "ChatGPT and Language Education", possibly the first video published on the topic of ChatGPT and language learning through YouTube. The presenter and three other colleagues collaborated in collecting and analyzing Youtube Videos on this topic, exploring perceptions of educational affordances of ChatGPT for world language learning and teaching. Two articles have been published on this research line and two more have been submitted. The research studies have served as the ground of the presenter's self-directed professional training with the purpose to provide professional development to world language teachers that covers various aspects of language instruction.

This current presentation is based on a series research and self-directed professional training, constantly refined through testing under different contexts and presenting to different groups of audiences.

Figure 1 illustrate the process of how the presenter has come up with the content of this presentation.

The journey started with 4 collaborative research studying YouTubers who have published videos on the topic of ChatGPT and language teaching and learning.

- ***Research 1***: Li, B., Kou, X., & Bonk, C. J. (2023). Embracing the disrupted language teaching and learning field: Analyzing YouTube content creation related to ChatGPT. Languages, 8, 197. https://doi.org/10.3390/languages8030197
    - Explored 140 YouTube Videos. Focused on finding out general benefits, drawbacks and concerns.
- ***Research 2***: Li, B., Bonk, C. J., & **Kou, X**. (2023). Exploring the multilingual applications of ChatGPT: Uncovering language learning affordances in YouTuber

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videos. International Journal of Computer-Assisted Language Learning and Teaching (IJCALLT), 13(1), 1-22. http://doi.org/10.4018/IJCALLT.326135.

  - Analyzed in more details of 45 selected YouTube Videos and comments across 18 languages, focusing on detailed affordances for language teaching and learning and best practices for making use of the tool.

- ***Research 3*:** Li, B., Wang, C., Bonk, C. J., & Kou, X. (Proposal accepted). Exploring inventions in self-directed language learning with generative AI: implementations and perspectives of YouTube content creators. *TechTrends*.
  - Interviewed 14 YouTubers. Focused on self-directed learning
- **Research 4**: Li, B., Bonk, C. J., Wang, C., & Kou, X. (Under review). Reconceptualizing the self-directed language learning in the era of generative AI: an exploratory analysis. *IEEE*.
  - Interviewed 19 YouTubers and analyzed 30 videos. Focused on self-directed learning design and a theoretical model.

Based on learning from these research (especially the first two), the presenter started a systematic self-directed professional training of using the tool to explore the following aspects of language teaching:

- Reading comprehension (including learning of vocabulary and grammar)
- Conversation
- Writing

In addition, the following aspects instructional support through ChatGPT are explored:

- Generating text for enrichment and targeted reading
- Generating ideas for classroom tasks and assignment
- Generating rubrics
- Generating lesson plan

The result of the self-directed learning are turned into 4 hands-on training for language educators teaching various different languages. New feature is added in each workshop taught. Alternative tools are also tested.

This current speech is based on the previous four hands-on workshops, focusing on extrapolating best practices, discussing the role of instructors, and pointing out importance of AI literacy for professional development.

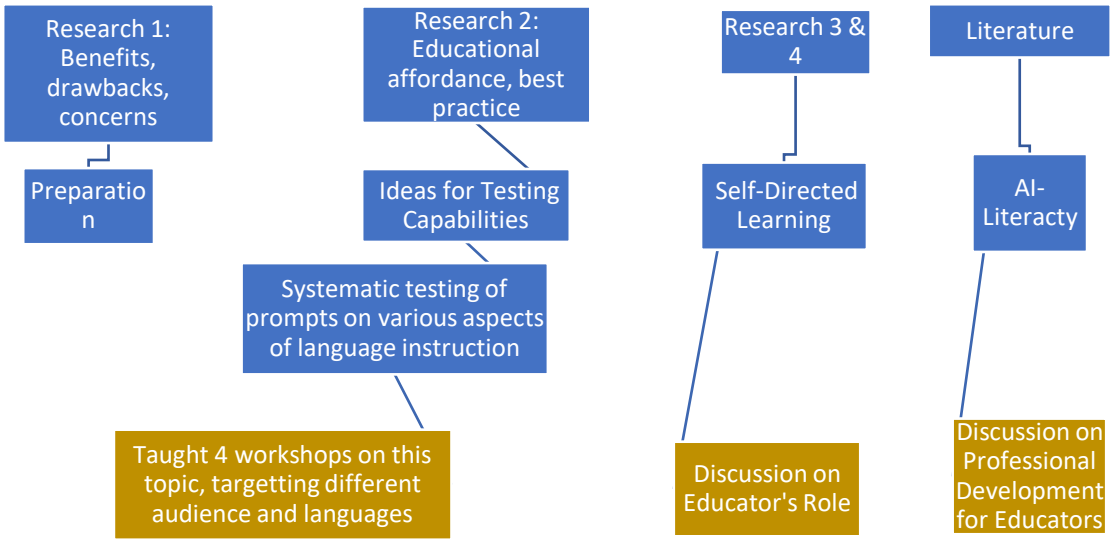

Figure 1. How have I reached here? Preparation work for this presentation

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VISUALISATIONS IN STEM EDUCATION: HOW CAN WE USE DRAWING AND VISUAL MODELS TO UNDERSTAND STUDENT IDEAS

Lukas Rokos[1]

ABSTRACT

Visualisations play a crucial role in STEM education because they offer innovative and effective ways to discover complex concepts, foster the participation of students, and promote deeper learning. In this presentation, we will explore different ways to use visualizations in STEM tasks to understand students' ideas about various topics. We will also discuss the potential and limits of their use in these tasks and in STEM activities in general.

Keywords: STEM, visualisations, concept cartoons, models

INTRODUCTION

STEM is an acronym that stands for Science, Technology, Engineering and Mathematics, and it represents an interdisciplinary approach to education and problem solving, bringing together these four core disciplines to address real-world challenges and promote innovation (Johnson et al., 2020). STEM is also known for the complexity and the need for students to understand abstract theories and to understand the connection of various knowledge from different disciplines. The visual representations are an important part of science, and they help scientists to present complex phenomena that are not observable in other ways (Richards, 2003). The use of visualisations provides a wide spectrum of tools and techniques that help to better explanation of ideas and stimulate a passion for learning. Visualisations also support productive argumentation, scaffold student learning, and enable evidence-based argumentation (Clark et al., 2007).

TYPES OF VISUALIZATIONS IN STEM EDUCATION

Gilbert (2010) recognised the following categories of visualisations: pictures, diagrams and graphic sub-forms. Rybska (2016) used three dimensions of drawings in biology education: schemes, drawings, and sketches. The students draw what they see in the schemes and they draw what they understand in the drawings. Sketches are based on their knowledge and skills and understanding of the presented issue, and they may create representations new for them as a result of creative problem solving (Rybska, 2016).

We will use a slightly different categorisation in this presentation, but we still refer to categorisations mentioned above because they are valid for our examples too. We would like to distinguish the following forms of visual representations: 1) Static visualisations includes diagrams, graphs, and images that help in understanding the fundamental concepts and making abstract ideas and theories more tangible.; 2) Dynamic visualizations in the form of interactive simulations and animations that allow students to be actively engaged and manipulate variables and observe real-time outcomes.; 3) Augmented reality (AR) and virtual reality (VR) enables the most immersive experiences and the students have opportunity to explore complex structures and systems in virtual environment.

There are specific scientific practises related to the use of visual information: asking questions and defining problems, analysing and interpreting data, experimenting, and modelling (Evagorou et al., 2015). These practises are very similar to activities we want to do with students

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at classes when we include some visualisations and/or ask them to create their own visualisations.

Visualisation tools are said to bridge the gap between abstract theory and real-world application. The benefits of their use are conceptual clarity because students can build their own models, and the discussion of the models helps to better understand STEM topics (Hepworth & Canon, 2018). Students are involved in the teaching-learning process, and they can include various resources to their visualisations and show their creativity. Visualisations are also said to be easy accessible to all students, because they have the opportunity to describe their ideas in different ways and not only verbally. For example, if we use concept cartoons students can hide their ideas in the bubble speech of the drawn person and present them a little more anonymously.

IMPLEMENTATION OF VISUALISATIONS IN STEM TASKS

The question of how to effectively include visualisations in various tasks remains very crucial for teachers and researchers. We have various possibilities on how to implement them. If we are able to integrate the visualisations into the curriculum, it ensures their important role, and they will not only be a supplement but crucial or integral part of the teaching and learning process. Visualisation could be easily implemented in hands-on activities because students are asked to create their own drawings, models, and simulations. They can use their creativity, and this way also reinforces their understanding of STEM concepts. Visualisations can also play a role in the assessment process. Students can do their self-assessment with the support of visualisations. For example, concept cartoons could be used as the form of assessment and feedback for teacher as well as students related to their level of understanding of the selected topics, and they also help to discover some misconceptions.

We will focus on different versions of visualisations in this presentation, and we will follow the categorisations mentioned in previous paragraphs, as well as the different possibilities on how to implement them. We will start with static visualisation in the form of drawing created by students, as well as more sophisticated models related to the specific topic of energy use in professional sport (Koldova & Rokos, 2023). This example represents a complex activity that was implemented in the curriculum of the specific subject at the university level, and the pilot dissemination was also done at the lower secondary level. The second version is dynamic visualisation in the form of animation connected to the task about Moon and the way in which students used that animation to solve their task (Rajtmajerova & Rokos, 2023). This example is intended to be used as a special hands-on activity at the lower secondary level and was verified with students in the practise. The third version is connected with argumentation, and it is represented by the use of concept cartoons in STEM. This example shows the potential of using visualisations for the assessment process as well. In this case, the students' own concept cartoons will be presented including the categorisation of them based on criteria developed by Samkova et al. (2021).

As mentioned already, each example of visualisations and their use will be supplemented with illustrative examples from specific tasks, including the results of the students' work. And, other recommendations on how the information obtained can be used to understand what the students think about the given issue. And not only in the given class, but also for research purposes.

CONCLUSION

Visualisations in STEM is crucial part of teaching-learning process because they allow teachers to discover the understanding of the students, identify misconceptions, and adapt the next steps in their teaching. The use of visualisations or their creation by students facilitates the comprehension of complex concepts. Visual tools provide a bridge between abstract theories and student cognitive processes, making learning more accessible and engaging. Moreover, visualisations promote active learning, encouraging students to explore, experiment, and express their thoughts with the possibility of using their own creativity. If we include visualisations in STEM tasks, the goal for STEM education in the form of enhancing conceptual understanding, cultivation of critical thinking, and problem-solving skills as well as preparing students to excel in innovations and analytical thinking can be reached.

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WORKSHOPS

DATA ANALYSIS THROUGH R FOR EDUCATORS

Duygu Güngör Culha[1]

ABSTRACT

With the advancement of computer technology in data analysis, various statistical software packages have become readily accessible for researchers in the fields of social sciences and education. Notably, in recent years, free software, R, along with user-friendly add-ons, has gained widespread use. Among the advantages of the R program are its free accessibility for everyone, its capacity to engage a wide range of researchers through international collaboration, and an interface ensuring research reproducibility. The purpose of this workshop, aimed at guiding first-time R users. In this workshop, the installation of the R program and its interface, R Studio, on computers will be introduced initially. Then, four fundamental windows associated with the program, namely source, console, environment, and files, will be introduce. Then, the entry of the provided sample data and the execution of descriptive analyses will be covered.

Keywords: R, R studio, statistics

INTRODUCTION

Statistics can be defined as a methodological science that primarily involves the analysis and interpretation of data obtained through scientific method. With the advancement of computer technology in data analysis, various statistical software packages have become readily accessible for researchers in the fields of social sciences and education. In recent years, a free software R, along with user-friendly adds-ons, has become widely used (Muenchen, 2023).

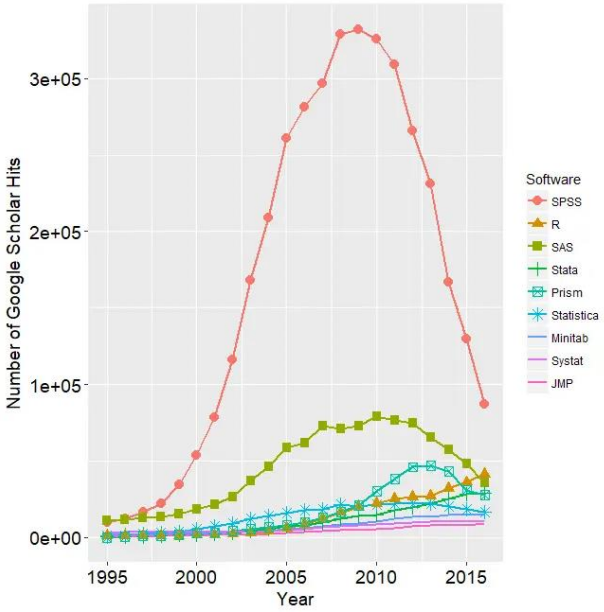

Figure 1. The frequency of usage of various statistical software packages over the years
The figure is obtained from the source http://r4stats.com/articles/popularity/ on August,27 2023

Some of the advantages of the R program include its free and accessible nature for everyone, its ability to encompass a wide range of researchers through international collaboration, and an interface that ensures the reproducibility of research. However, it does have some disadvantages, such as the potential for certain risks due to its open-source nature and usability challenges for researchers accustomed to point-and-click program interfaces.

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The purpose of this workshop is to guide researchers who are using the program for the first time. In the workshop, the installation of the R program and its interface, R Studio, on computers will be introduced initially. Then, four fundamental windows associated with the program, namely source, console, environment, and files, will be introduced (de Vries & Meys, 2015).

In the workshop, the entry of the provided sample data and the execution of descriptive analyses will be covered.

Table 1. Example data set

Scores*	
Group A	Group B
42	41
40	43
46	45
39	39
44	40
47	46
41	42
43	38
45	44
38	41

Following codes can be used for data entry:

```
grup <- c(rep(1,10),rep(2,10))

tutum <- c(42,40,46,39,44,47,41,43,45,38,41,43,45,39,40,46,42,38,44,41)

MyData <- data.frame (grup, tutum)
```

At the end of the workshop participants can enter data in R. They can run descriptive statistics and can test group differences. They can use R to report their findings in APA style.

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BUILDING BRIDGES WITH ETWINNING

Helene Claeys[1]
Corinne Mancel[2]

From Internationalisation at Home to Physical Mobility

Helene Claeys and Corinne Mancel are teacher-trainers at the University of Picardy Jules Verne, France and eTwinning ambassadors.

Their collaboration with Turkish universities started 2 years ago with Professor Burcu Sezginsoy Seker UNESAK Balıkesir Üniversitesi and Professor Ümit Izgi Onbasili Mersin Üniversitesi. They were then joined by Richard Power from the University of Stuttgart, Germany, Elif Gulfay from the University of Palermo, Italy and Bert Kuiper, from VIAA University, Zwolle, The Netherlands.

What is eTwinning ? It is a collaborative online platform to find partners. It is a bridge:

- between teachers
- between schools
- between students
- between countries
- between cultures
- between education professionals…..between here and there.

The workshop aims at showing how eTwinning helps fostering international exchanges and ITE (Initial Teacher Education) projects among student-teachers of different nationalities. They are given the opportunity to exchange with foreign partners by building projects, which allows them to cross their perspectives, compare practices, improve their linguistic and cultural skills and knowledge. They are also led to develop their IT skills, intercultural, plurilingual and teamwork competences.

The workshop starts with a presentation of the projects implemented over the past few years with primary education student-teachers: ***Qualified Teacher of the Future*** initiated by Ümit

[1] Picardie Jules Verne University
[2] Picardie Jules Verne University

Izgi Onbasili and Burcu Sezginsoy Seker in 2022, ***Making Children Happy***, in 2023, ***Singing and Dancing Maths***, 2023.

Teachers and students attending the workshop are then invited to experiment project-based building, sharing ideas according to their specific subject areas. The projects are then shared and presented to the other groups, which gives participants the opportunity to ask questions and get answers more specifically about GDPR norms. Some participants took part in the eTwinning projects implemented in 2022 and 2023 and expressed their wish to participate in the 2024 project entitled ***Water Flows and finds its way*** which will be part of an *Erasmus* + Blended Intensive Programme as it will combine eTwinning collaboration and mobility.

GAME-FRIENDLY SCHOOL AND GAME-FRIENDLY TEACHER

Yavuz Samur[1]

ABSTRACT

This keynote speech focuses on the importance of game-based learning strategies and teacher engagement in education. It explores how teachers can effectively use games in their lessons and examines how designing original games for their classes supports student-centered learning. Additionally, it aims to enhance learning environments by advocating for schools to have broader gaming spaces and encouraging teachers to collaborate with students in designing these spaces, thereby strengthening student-teacher interactions. The article emphasizes the potential of the game-friendly school approach in making learning experiences more meaningful by supporting students' creativity and collaboration skills in education.

Keywords: Game, game-based learning, teacher, learner, school

INTRODUCTION

The field of education has become a constantly evolving space filled with concepts that shape the learning paradigm and provide a new perspective on traditional teaching methods. At the heart of this evolution, game-based learning strategies play a significant role in enabling students to learn more effectively and making the learning process more enjoyable. In this article, we will explore how the use of games in education plays a crucial role in redefining the role of teachers and in motivating students more effectively. Game-based learning in education has emerged as a powerful tool to increase student engagement, enhance collaboration skills, and facilitate a deeper understanding of concepts. In this context, teachers strategically incorporating games into their lessons bring the potential to provide students with an interactive and unique learning experience (Samur & Cömert, 2022). However, the role of teachers in this educational revolution is not limited to just integrating existing games. Designing original games for their own lessons is also a crucial step for teachers to better cater to the individual learning needs of students. This article will focus on how teachers can actively participate in this design process and collaborate with students in this creative endeavour. Furthermore, it is important to adapt the physical environments of schools to support students' gamified learning experiences. Expansive gaming spaces can contribute to both the physical and mental development of students. In this context, creating a more game-friendly environment in schools and teachers taking a leading role in this process are critical factors for the successful implementation of this innovative approach in education. This keynote speech aims to closely examine these important issues to understand the opportunities brought by game-based learning in education and how teachers can take a pioneering role in this transformation.

METHOD

This keynote speech is designed to focus on game-based learning strategies in education and provide practical steps for implementing Game-Friendly School and Game-Friendly Teacher practices, aiming to ensure that teachers effectively integrate these strategies. Below are a series of suggested steps on how teachers can adapt this approach to their own lessons and collaborate with students:

1. Student Profile Analysis:

[1] Assoc. Prof.. Dr., Bahçeşehir University

Identify student profiles by conducting a survey on students' interests, learning styles, and strengths.

These profiles will serve as a fundamental guide in designing student-centered game-based strategies.

2. Setting Game-Based Learning Objectives:

Determine game-based learning objectives in alignment with the curriculum.

These objectives should include key criteria that will measure students' knowledge acquisition and reinforce learning.

3. Exploring Relevant Educational Technologies:

Research suitable educational technologies for game-based learning.

Digital games, simulations, or interactive learning tools can provide students with different learning experiences.

4. Collaborating with Students:

Discuss game-based learning strategies with students.

Make the learning experience more student-focused by gathering students' suggestions and feedback.

5. Teacher-Game Designer Collaboration:

Design original games by seeking assistance from game design experts or forming an in-house game design team.

Create learning materials that align with students' needs and learning objectives.

6. Integrating Game-Based Activities:

Integrate game-based activities into your lesson plans.

These activities should not only encourage active student participation but also align with learning objectives.

These methods can assist teachers in integrating game-based learning strategies into their teaching practices, providing foundational steps to create a student-centered, interactive learning environment.

RESULTS AND DISCUSSION

NA

CONCLUSION, DISCUSSION, AND RECOMMENDATIONS

NA

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MEASUREMENT OF 21st CENTURY SKILLS

İsmail Karakaya[1]

ABSTRACT

It is observed that both individually and institutionally, problems encountered in daily life are more complex compared to the past. In order to solve these problems and succeed in life, individuals need to possess cognitive skills such as creative thinking, critical thinking, and collaboration-based problem-solving, social skills such as collaboration, communication, group work, and emotional skills such as empathy, self-management, and self-regulation. The teaching design and measurement and evaluation practices in an educational environment aimed at imparting these skills differ from classical teaching processes and measurement-evaluation practices. For instance, in teaching design, Haladyna or Marzano taxonomy takes precedence over the Bloom taxonomy. In measurement and evaluation practices, collaborative applications, student involvement in the assessment process (self-assessment, peer assessment, group assessment), simultaneous implementation of teaching and measurement practices, and assessments based on supporting instruction are emphasized. The most common practices in assessing skills include electronic portfolios, performance tasks, collaboration-based problem-solving tasks, scenario-based tasks, game-based tasks, open-ended questions, self-assessment, peer assessment, and group assessment. Rubrics are commonly used as a scoring tool in all these applications. A significant difference between performance-based assessment practices and classical measurement practices is the simultaneous measurement of both cognitive and socio-emotional skills. Additionally, feedback becomes more crucial in these applications.

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