Preparing future primary school teachers for trilingual teaching with Clil technology

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Abstract

The purpose of this research is to evaluate the readiness of future primary school teachers for trilingual teaching with CLIL technology. Qualitative research method was used in the study. A semi-structured interview form prepared by the researchers was used to collect the data. 160 teacher candidates studying at various universities in Kazakhstan in the 2020-2021 academic year participated in the research. As a result of the research, it was determined that the primary school teacher candidates' readiness for trilingual instruction with CLIL technology was insufficient. Research findings revealed the necessity of reorganizing the learning curricula in higher education programs in order for primary school teacher candidates to gain competence in the field of trilingual education with CLIL technology.

Keywords: Content and Language Integrated Learning, CLIL technology, trilingual education, teacher competencies, teacher opinions

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1. Introduction

Kazakhstan is the first Central Asian country to introduce Content and Language Integrated Learning (CLIL) which uses three different languages as an educational tool for different content topics as part of an ambitious national policy of language of instruction (Karabassova, 2018). The use of Kazakh language in high schools is mainly shown in groups whose language of instruction is Kazakh and who mostly read Kazakh magazines, books and scientific literature. Despite the educational environment, most Kazakh students use Russian in the public domain. Kazakh and Russian are used as the language of instruction in all educational institutions of Kazakhstan. Compared to the use of Kazakh and Russian in our universities, English is also taught. Although the number of native English speakers in Kazakhstan is very small, universities organize many English-speaking meetings, conferences, forums and seminars. The language policy of Kazakhstan dictates the necessity of a functional trilingual education model that includes Kazakh (State), Russian (Official) and English (International) and includes the development of language skills such as reading, writing, listening and speaking (Tussupbekova et al., 2018).

1.1. Theoretical and conceptual framework

The problems faced by humanity in the 21st century ignited the idea of modernizing the old education system, especially when it comes to foreign languages, to help meet the needs of world science, economy and business World (Sulkarnayeva- Raphailovna, 2017).

Language is the key to unlocking the human mind and a means of exchange of thoughts. It is an important criterion in acquiring belief and identity, among other influential factors (Golabi, Hajilou, 2015).

In the field of bilingualism, it is important to understand the current concept of science correctly and to make the discussion on a consistent and understandable level. It is expected that the words used to indicate the concepts, especially in a controversial field such as language education, should not cause confusion. While language teaching plans are being made, the goals set are shaped on the specific concepts of the relevant field. For example, although the concepts of bilingual or multilingual refer to the same concept, they are defined with different expressions in the sources. This situation causes the already complex field of language teaching to seem even more complex (Bican, 2019).

Trilingual education is an ambitious national scheme to promote the use of three languages in Kazakhstan: Kazakh as the state language, Russian as the language of interethnic communication, and English as the language of integration into the global economy. While three languages are always taught as individual subjects in independent Kazakhstan, the trilingual education policy expresses a new approach that envisages teaching non-language curriculum subjects in three different languages (Karabassova, 2020).

The SDPES (State Development Program for Education and Science) for 2016-2019 includes the main trends in the development of trilingual education and the adopted Roadmap of trilingual education from 2015-2020. Their aim is to ensure the gradual introduction of trilingual education at all educational levels in Kazakhstan. In this context, Kazakhstan has developed a joint strategy for the training of trilingual teachers. For example, from the perspective of the pedagogical university (Abai Kazakh National Pedagogical University), the authors present the stages of implementation of the process based on the following priority areas: improvement of the legal and methodological framework; updating training programs; creation of a unified education system and professional development of teaching and management personnel (Kulsariyeva, Iskakova, & Tajiyeva, 2017). The trilingual education model allows the adoption of new teaching techniques of Kazakh, Russian and

English languages based on expressive, associative and integrative language functions. In the Kazakhstan education system, each language is accepted as a variable and alternative teaching tool at a certain educational level (Tussupbekova et al., 2018).

CLIL is a general or umbrella term used to refer to "a bifocal educational approach in which an additional language is used to learn and teach both content and language" (Marsh and Langé 2000). The desire to present the content of the courses and foreign language teaching simultaneously and in relation to each other at school reveals the theory of the CLIL model (Bican, 2019).

Content and Language Integrated Learning (CLIL) is a teaching method invented and developed by Finnish educator David Marsh. In 1994, with the initiative of the European Commission, it was decided to use it in public schools. In the early days of practice, the main purpose was not only educational, but also political. However, over time, it has become a system whose use has increased intensively in all member countries. In this teaching system known as Integrated Learning of Content and Language (CLIL), both the branch course and the language are taught to the students (Aldim, 2018).

With the effect of globalization, the integration of trilingual learning with CLIL technology has become an important element that increases the quality of education. The effective use of trilingual education with CLIL technology, which we can consider as a new initiative in learning, the fact that primary school teacher candidates have a good command of this teaching model and have sufficient equipment will make an important contribution to the understanding of education of the age.

1.2. Related research

Research on CLIL has mostly focused on the analysis of its effects on each foreign language learning and its impact on attitudes and motivations towards language learning (Seikkula-Leino, 2007; Lasagabaster, 2011; Lasagabaster, & Doiz, 2017). In addition, the effects of CLIL on content learning appear as another research area (Admiraal, Westhoff, & De Bot, 2006; Navarro-Pablo & López, 2020).

Díaz and Requejo (2008) conducted a study at the university of Alcalá (Spain) aimed at examining the needs of teachers involved in a bilingual teaching project conducted in a number of primary schools in Madrid since 2003. This research revealed the fears and anxieties about this new teaching method and the difficulties of abandoning some old concepts and accepting some innovative concepts. In addition, learning and teaching outcomes through an additional language, as well as the advantages of the bilingual mind, have proven to be of strong benefit when examined from multiple perspectives (eg pedagogical, cognitive, neurological, sociocultural) (Ahern, 2014).

Flores (2001) in her extensive research on bilingual education teachers' believes suggested that personal experiences may initially influence bilingual education teachers' believes, and that these believes are reaffirmed, modified, or enhanced by increased knowledge through teacher preparation or professional experience.

In the study of Madarova and Laborda (2020), general education English-Spanish 1.-12. They presented a perspective on the bilingual education system in Spain in classrooms. The result demonstrates the understanding that English-Spanish bilingual education is not harmful, but rather benefits the cognitive and linguistic development of most schoolchildren.

ELDaou and Abdallah (2019) investigated the effect of CLIL implementation on students' attitudes and performance. The results of their study demonstrated the positive attitudes of students towards the implementation of CLIL and demonstrated the effectiveness of CLIL as a pedagogical approach in increasing students' self-efficacy and academic performance.

Tsimerman (2018) examined the motivation of advanced students in content and language integrated learning (CLIL) environments. He expressed the positive effects of the CLIL learning environment in formal and online learning.

However, some researchers (Cenoz & Genesee, 1998; Cenoz & Jessner, 2000; Edwards, 1994; Hufeisen & Lindemann, 1998) argue that little attention has been paid to trilingual education compared to the literature on first/second language acquisition and monolingual/bilingual education.

Although it is not possible to integrate it into every culture and every curriculum, Kazakhstan is one of the only lands where trilingual learning can be applied effectively. For this reason, determining the trilingual education readiness of the future primary school teachers, who are the subject of this study, with CLIL technology is considered important in terms of meeting the learning-teaching needs.

1.3. Purpose of the research

The purpose of this research is to determine the trilingual education readiness of future primary school teachers with CLIL technology.

In line with the purpose of the research, answers were sought for the following sub-objectives.

1. Do you find yourself competent in providing trilingual education?

2. Do you find yourself competent to teach using CLIL technology?

3. Do you find yourself competent to provide trilingual education with CLIL technology?

2. Method and Materials

This section includes information about the research model, participants, data collection tools, data collection process and data analysis.

2.1. Research method

This research is a qualitative study to determine the trilingual teaching competencies of primary school teacher candidates with CLIL technology. Qualitative research is the research in which qualitative data collection methods such as observation, interview and document analysis are used, and a qualitative process is followed to reveal perceptions and events in a realistic and holistic way in the natural environment. With qualitative research, the meanings arising from the experiences of the people researched can be systematically examined (Creswell, 2017). Phenomenology, which is one of the sub-units of qualitative research, was used as the research model, and the research model in question is used to gain knowledge in areas that are known but not analyzed in detail and therefore cannot be informed in detail. In the phenomenology design, the researcher carries out studies to reveal the experiences of individuals about a phenomenon (Annells, 2006).

2.2. Participants

Convenience sampling, one of the purposeful sampling methods, was used to determine the study group. Easily accessible sampling is a method that is frequently preferred by researchers because it is easier to reach the participants (Carey, 2017). The study group of the research consists of pre-service teachers studying in the 1st, 2nd, 3rd and 4th grades of primary school teaching departments in various universities in Kazakhstan. The research consists of primary school teacher candidates studying in the

2020-2021 academic year. In order for the data obtained from the pre-service teachers participating in the research to be compared more accurately and the data analysis to be done more systematically, a homogeneous distribution was ensured when possible in the distribution of the pre-service teachers participating in the research. Demographic characteristics of the participants are given in Table 1.

2.3. Data collection tools

Research data were collected using a semi-structured interview form created by the researcher. In the form, there are 2 questions about the demographic characteristics of the pre-service teachers who accepted to participate in the research voluntarily, and 3 questions determined in accordance with the purpose of the research. Semi-structured interview form is included in Annex-1.

2.4. Data collection process

The semi-structured interview form prepared for the research was sent via e-mail to the primary school teacher candidates who wanted to participate in the research voluntarily. Participants were asked to return by answering the questions on the form.

2.5. Data collection analysis

The answers given by the participants were analyzed on the basis of reliability. In qualitative research, reliability is usually the stability of datasets in the answers of more than one coder. The obtained data were analyzed separately by two researchers. The reliability of the two encodings was calculated with the formula Miles and Huberman (1994). According to Miles and Huberman (1994), reliability; It is obtained by dividing the common results by the sum of the results that do not match the common results and multiplying by one hundred. As a result of the reliability study, it was seen that the agreement between the coding was 100%. In the tables created accordingly, the answers of the pre-service teachers who participated in the research were categorized by frequency and percentage calculations. With this method, qualitative data were digitized.

3. Results

In this section, information about the questions in the semi-structured interview form is given.

Table 1 shows the demographic characteristics (gender and class of education) of the pre-service teachers participating in the research.

Table 1.

Distribution of teachers by gender and class of education

Class	Gender		Sum
	Female	Male	
1st Class	18	22	40
2nd Class	11	29	40
3rd Class	23	17	40
4th Class	28	12	40
Sum	80	80	160

In Table 1, the gender and class distributions of the pre-service teachers are given. Half of the 160 pre-service teachers participating in the research are female (50%), half are male (50%), and the number of pre-service teachers studying in each class is equal. 40 1st grade, 40 2nd grade, 40 3rd grade and 40 4th grade teacher candidates participated in the research.

In Table 2, the teacher candidates' answers to the question "Do you find yourself sufficient to provide trilingual education?" The answers given to the question were given according to the class distribution.

Table 2 : *Distribution of pre-service teachers' levels of self-efficacy in providing trilingual education according to the class they study.*

Class	Yes		No		Sum	
	F	%	F	%	F	%
1st grade teacher candidates	4	10	36	90	40	100
2nd grade teacher candidates	13	32,5	27	67,5	40	100
3rd grade teacher candidates	16	40	24	60	40	100
4th grade teacher candidates	25	62,5	15	37,5	40	100

In Table 2, the distribution of the pre-service teachers' views of finding themselves sufficient to provide trilingual education according to the class they study is given. While 10% of the students studying in the 1st grade found themselves sufficient in providing trilingual education, 90% stated that they did not find it sufficient. While 32.5% of the teacher candidates studying in the 2nd grade found it sufficient, 67.5% stated that they did not find it sufficient. The pre-service teachers studying in the 3rd grade found themselves sufficient at the rate of 40% and not sufficient at the rate of 60%. The 4th grade teacher candidates, on the other hand, stated that while 62.5% found themselves sufficient, 37.5% claimed that they did not find themselves sufficient. In line with the answers given by the pre-service teachers, it is seen that their proficiency in providing trilingual education increases in direct proportion as the class they study increases.

In Table 3, the teacher candidates' "Do you find yourself sufficient in teaching trilingual education?" The answers given to the question were given according to gender distribution.

Table 3 : *Distribution of pre-service teachers' finding themselves competent in providing trilingual education by gender*

Gender	Yes		No		Sum	
	F	%	F	%	F	%
Female	33	41,25	47	58,75	80	100

	Yes F	Yes %	No F	No %	Sum F	Sum %
Male	25	31,25	55	68,75	80	100
Sum	58	36,25	102	63,75	160	100

In Table 3, the gender distribution of the pre-service teachers' finding themselves sufficient to provide trilingual education is given. While 41.25% of the female teacher candidates participating in the research found themselves sufficient, 58.75% did not find themselves sufficient. On the other hand, 31.25% of male teacher candidates participating in the research found themselves sufficient, and 68.75% did not find it sufficient. 36.25% of all teacher candidates found themselves sufficient and 63.75% found themselves inadequate.

Based on this, it is concluded that female teacher candidates find themselves more competent than male teacher candidates in providing trilingual education, but in general, the majority of teacher candidates find themselves inadequate.

Table 4 captures the answers to the questions of "Do you find yourself sufficient in teaching, using CLIL technology?" The answers given to the question were given according to the class distribution.

Table 4 : *Distribution of pre-service teachers' levels of self-efficacy in teaching using CLIL technology by class*

Class	Yes F	Yes %	No F	No %	Sum F	Sum %
1st grade teacher c	3	7,5	37	92,5	40	100

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andidates

2nd grade teacher candidates

11	27	29,5	72	40	100

3rd grade teacher candidates an

13	32	27,5	67	40	100

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Table 4 shows the distribution of pre-service teachers' levels of self-efficacy in teaching using CLIL technology, according to the class they study. While 7.5% of the students studying in the 1st year found themselves sufficient to provide education using CLIL technology, 92.5% stated that they did not find it sufficient. While 27.5% of the teacher candidates studying in the 2nd grade found it sufficient, 72.5% stated that they did not find it sufficient. Pre-service teachers studying in the 3rd grade found themselves sufficient at a rate of 32.5% and not at a rate of 67.5%. While 55% of the 4th grade teacher candidates found themselves sufficient, 345% claimed that they did not find themselves sufficient. In line with the answers given by the pre-service teachers, it is seen that their proficiency in teaching using CLIL technology increases in direct proportion as the grade they study increases.

In Table 5, the teacher candidates' "Do you find yourself competent to teach using CLIL technology?" The answers given to the question were given according to gender distribution.

Table 5 : *Distribution of pre-service teachers' self-efficacy in teaching using CLIL technology by gender*

	Yes	No	Sum

	F	%	F	%	F	%
Gender						
Female	22	27,5	58	72,5	80	100
Male	27	33,75	53	66,25	80	100
Sum	49	30,62	111	69,38	160	100

In Table 5, the gender distribution of the pre-service teachers' self-efficacy in teaching using CLIL technology is given. While 27.5% of the female teacher candidates participating in the research found themselves sufficient, 72.5% did not find themselves sufficient. On the other hand, 33.75% of male teacher candidates who participated in the research found themselves sufficient and 66.25% did not find themselves sufficient.

Teachers' opinions reveal that male teacher candidates find themselves more competent than female teacher candidates in teaching using CLIL technology. In addition, teacher candidates; They found themselves 30.62% sufficient and 69.38% inadequate regarding providing training using CLIL technology.

In Table 6, the questions of "Do you find yourself sufficient to provide trilingual education with CLIL technology?" The answers given to the question were given according to the class distribution.

Table 6 : *Distribution of pre-service teachers' levels of self-efficacy in providing trilingual education with CLIL technology by class*

	Yes		No		Sum	
Class	F	%	F	%	F	%
1st	1	2,5	39	97	40	100

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4th grade de teacher candidates	47	12	42,5	23	57,5	40	100

Table 6 shows the distribution of pre-service teachers' levels of self-efficacy in teaching trilingual education using CLIL technology, according to the class they study. While 2.5% of the students studying in the 1st grade found themselves sufficient to provide trilingual education using CLIL technology, 97.5% stated that they did not find it sufficient. While 22.5% of the teacher candidates studying in the 2nd grade found it sufficient, 77.5% stated that they did not find it sufficient. The pre-service teachers

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studying in the 3rd grade found themselves sufficient by 25% and not by 75%. The 4th grade teacher candidates, on the other hand, stated that while 42.5% found themselves sufficient, 57.5% claimed that they did not find themselves sufficient. In line with the answers given by the pre-service teachers, it is seen that their proficiency in providing trilingual education using CLIL technology increases in direct proportion as the class they study increases.

In Table 7, the questions of "Do you find yourself sufficient to provide trilingual education with CLIL technology?" The answers given to the question were given according to gender distribution.

Table 7: *Distribution of pre-service teachers' self-efficacy in providing trilingual education with CLIL technology by gender*

Gender	Yes		No		Sum	
	F	%	F	%	F	%
Female	20	25	60	75	80	100
Male	17	21,25	63	78,75	80	100
Sum	37	13,12	123	76,88	160	100

In Table 7, the gender distribution of pre-service teachers' levels of self-efficacy in providing trilingual education using CLIL technology is given. While 25% of the female teacher candidates participating in the research found themselves sufficient, 75% did not find themselves sufficient. On the other hand, 21.25% of the male teacher candidates participating in the research found themselves sufficient, and 78.75% did not find it sufficient.

Teachers' opinions reveal that female teacher candidates find themselves more competent than male teacher candidates in providing trilingual education using CLIL technology. In addition, teacher candidates found themselves competent at a rate of 13.12% and inadequate at a rate of 76.88% in terms of providing trilingual education using CLIL technology.

4. Discussions

The findings obtained from the research revealed that pre-service teachers do not consider themselves sufficient in terms of trilingual education and CLIL technology. On the other hand, it is seen that the class in which the pre-service teacher's study has a significant impact on their proficiency in providing trilingual education with CLIL technology. Liu, Wang, and Koehler (2019) showed in their research that

there is a discrepancy between CLIL teachers' technology integration intentions and their actual use. This, in direct proportion to the research findings, reveal that teachers do not have sufficient equipment regarding CLIL technology. Hubbard (2018), in his research on technology and professional development, stated that teachers do not experience CLIL technology in language classes as students during the education process. He also concluded in his research that teachers should acquire both knowledge and skills on how to incorporate CLIL technologies in a student-centered manner. Shraiber and Ovinova (2017) in their study on CLIL technology as an innovative method for learning a foreign language at university, concluded that content and language learning that follows CLIL technology is related to hardware problems arising from the instructor. Yegizbayeva, Seitenova, and Zhazykova (2021), in their study on teachers' readiness for CLIL technology, determined that the teacher plays an important role in determining the success in content knowledge through another language in the CLIL classroom. For this reason, it has been found extremely important to train teachers in higher education institutions in accordance with CLIL technology and to ensure that they are qualified.

When the gender distribution of the pre-service teachers' finding themselves competent to provide trilingual education using CLIL technology is evaluated, it is possible to say that female teacher candidates find themselves relatively more competent than male teacher candidates. No research has been found in the literature that deals with the competencies of primary school teacher candidates in terms of providing multilingual education using CLIL technology, according to the gender variable. Comparative research on CLIL technology has been conducted in the literature, and in the research conducted by Alcaraz-Mármol (2018), educated and untrained language teachers related to CLIL technology were compared. The results show a clear difference that CLIL-trained teachers have more diverse resources and activities in their classrooms, while non-CLIL-trained teachers have less knowledge. Massler, Stotz, and Queisser (2014) stated that by following the trajectory of teaching 50% Elementary Degree disciplines in Kazakh, 20% in Russian and 30% in English, CLIL instruction on trainee development could be achieved and an early application of the CLIL approach could be achieved. Developing the foreign language skills of primary school children, making them more sensitive to different subjects, and raising them as active and responsible individuals in the lessons, is possible through teacher competencies.

5. Conclusion

In this study, the readiness of future primary school teachers to provide trilingual education with CLIL technology was evaluated. Since the Republic of Kazakhstan gained the status of an independent state, the bilingualism and multilingualism of the Kazakh people has developed. The solution of related activities aimed at reaching a conclusion with the importance of multilingualism, its social value and the scope used in daily communication, with the learning level of multilingualism of every ethnic group residing in our country, will be the result of continuous work in this direction. Multilingualism in Kazakhstan emerges as a requirement of the age we live in. Trilingual teaching of learning contents with CLIL technology is an important strategy in Kazakhstan to raise individuals who meet the requirements of the age. Although teacher training policies that will meet these needs are seen as a priority area of intervention, testing the competencies of teacher candidates in this area plays a key role in the implementation of the determined policies. As a result of the research, it has been revealed that future primary school teachers do not have sufficient readiness for trilingual teaching with CLIL technology.

6. Recommendations

The findings obtained from the research revealed that teacher candidates are not sufficient to provide trilingual education. Primary school teacher candidates also expressed their inadequacies in the field of teaching using CLIL technology. It is necessary to reorganize the learning curricula in the higher

education programs of teacher candidates in terms of providing multilingual education with CLIL technology. With the updated educational content, teacher candidates should be qualified in content and language integration. Training prospective teachers on CLIL technology will eliminate the need for any additional training on language acquisition and CLIL in postgraduate education.

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Annex 1. Primary School Teacher Candidates Interview Form

Primary School Teacher Candidates Interview Form

Demographic Information

Your gender: Female (   )   Male (   )

Class you are studying: 1st Class(   )   2nd Class(   )   3rd Class(   )   4th Class (   )

This research is carried out to determine the readiness of primary school teacher candidates for trilingual education with CLIL technology. Therefore, your opinion is needed.
The information you provide in the interview will only be used in the research; It will not be shared with any person or given to any institution. In addition, your personal information will not be included in the report while the research results are being written. Thank you in advance for your participation.

Questions	**YES**	**NO**
1. Do you find yourself sufficient in providing trilingual education? Opinion: ……………………………………………. …………………………………………………….		
2. Do you find yourself competent to provide training using CLIL technology? Opinion: ……………………………………………. …………………………………………………….		
3. Do you find yourself competent to provide trilingual education with CLIL technology? Opinion:……………………………………………….. …………………………………………………….		