Analysis of CLIL practices in a secondary school in Astana

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Submitted in partial fulfillment of the requirements for the degree of

Master of Arts in Multilingual

Education Nazarbayev University Graduate School of Education

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AUTHOR AGREEMENT

I hereby declare that this submission is my own work and to the best of my knowledge it contains no materials previously published or written by another person, or substantial proportions of material which have been submitted for the award of any other course or degree at NU or any other educational institution, except where due acknowledgement is made in the thesis. This thesis is the result of my own independent work, except where otherwise stated, and the views expressed here are my own.

Signed:
Date:

Ethics approval

NUGSE RESEARCH APPROVAL DECISION LETTER

The NUGSE Research Committee reviewed the project entitled "Students' attitudes and perceptions of Content Language Integrated Learning (CLIL) in a secondary school" and decided:

☐ To grant approval for this study subject to minor changes, to be discussed with supervisor

Approval subject to minor changes: The study is approved subject to minor changes.

Reviewers' feedback:

Apart from parental consent, the researcher should also ask students (participants) to read and sign an informed consent form. The informed consent form has not been described or made available in the online application form.

The parental informed consent form is appropriate, but the informed consent form for students is missing.

Before starting your data collection, you need to discuss these changes with your supervisor, revise your proposal accordingly, and then ask your supervisor to check the revised proposal.

Sincerely,

NUGSE Research Committee

NAZARBAYEV
UNIVERSITY
Graduate School
of Education

53 Kabanbay Batyr Ave.
010000 Astana,
Republic of Kazakhstan
October 2020

Dear Nazira Shabdenova

This letter now confirms that your research project entitled:

Analysis of CLIL Practices in a Secondary School in Astana

has been approved by the Graduate School of Education Ethics Committee of Nazarbayev University.

You may proceed with contacting your preferred research site and commencing your participant recruitment strategy.

Yours sincerely

Firmado
digitalmente por
Xabier San Isidro

Xabier San Isidro

On behalf of Zumrad Kataeva

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Nazira Shabdenova

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Abstract

Analysis of CLIL practices in a secondary school of Astana

The development of a Content and Language Integrated Language (CLIL) - oriented trilingual education policy in Kazakhstan has been inextricable connected to the nationwide endorsement of English as a third curricular language. The fact that CLIL is transitioning from experimental and piloting instruction at NIS to mainstream schools, has sparked off a dire need to analyze practitioners' views on this approach in secondary education.

This dissertation aims to explore the breakthrough and challenges of the CLIL approach and how teachers are balancing and integrating English in CLIL scenarios. A qualitative research method and semi-structured interviews were used to conduct the current study. Purposeful sampling was used for the selection of 8 teachers who participated in online one-on-one interviews. The findings revealed that most of the participants have a positive perception of the CLIL approach and associated it with breakthroughs as motivation, prospects, and teachers' qualifications. This study also revealed several challenges: English proficiency, Online –learning, CLIL training, Trilingual education, and lack of teaching material. As to the second question, related to the balance between content and language, Coyle's 4 Cs Framework (2008) was used as the theoretical underpinning for analysis. The study revealed that most of the teachers consider two blocks of the framework as Content and Cognition, while only a few respondents implicitly considered all 4 components of the 4 C framework in their lessons. The result could contribute to a better understanding of the current state of the CLIL approach and may help educational stakeholders as policymakers and practitioners to make more informed decisions for a more efficient transmission of a CLIL approach from piloting schools to all secondary schools.

Аңдатпа

Астананың орта мектебіндегі қолданылып жүрген пән мен тілді кіріктіріп оқытатын әдіске (CLIL) анализ

Қазақстанда CLIL-ді енгізуге бағытталған үштілді саясат ағылшын тілінің үшінші тіл ретінде бүкілхалықтық қабылдаумен тығыз байланысты. CLIL- дің эксперименттік және пилоттық Назарбаев Зияткерлік мектептерінен жалпы білім беретін мектептерге енуіне байланысты практиктердің орта білім беру жүйесіндегі осы тәсілге көзқарастарын талдаудың жедел қажеттілігі туындады.

Бұл тезисте CLIL тәсілінің жетістігі мен қиындықтары және мұғалімдердің CLIL сценарийінде тілді қалай мазмұнмен баланста ұстайтыны және интеграциялайтындығы зерттелді. Ағымдағы зерттеуді жүргізу үшін сапалы зерттеу әдісі және жартылай құрылымды сұхбат қолданылды. Интерактивті сұхбаттасуға қатысқан 8 мұғалімді таңдау үшін мақсатты іріктеу қолданылды. Зерттеулер қатысушылардың көпшілігінде CLIL тәсілін оң қабылдайтынын және оны мотивация, перспективалар және мұғалімдердің біліктілігі сияқты жетістіктермен байланыстыратындығын анықтады. Зерттеу барысында ағылшын тілін білу, Online-learning, CLIL-ті оқыту, үштілді білім беру және оқу материалдарының жетіспеушілігі сияқты бірнеше қиындықтар анықталды. Екінші зерттеу сұрағының жауабын Coyle(2008) ашқан 4 C фреймворкі көмектесті. Бұл зерттеудің нәтежиесі мұғалімдердің көпшілігі фреймворктың екі блогын Мазмұн және Танымды ғана қарастыратындығы анықталды. Респонденттердің тек аз бөлігі ғана өз сабақтарында 4 C фреймворкінің барлық 4 компоненттерін жанама түрде қарастырады екендігі белгілі болды. Қорытындылай келе, бұл нәтижелер CLIL тәсілінің қазіргі жағдайын жақсырақ түсінуге ықпал етеді және саясатты жасаушылар мен тәжірибешілер ретінде білім беру

мүдделі тараптарына CLIL тәсілін тәжірибелік мектептерден барлық орта мектептерге

тиімдірек беру үшін неғұрлым негізделген шешімдер қабылдауға көмектеседі.

Аннотация

Анализ практики методика предметно-языкового интегрированного обучения (CLIL) в средней школе Астаны

В Казахстане разработка политики трехъязычного образования, ориентированной на CLIL, неразрывно связана с общенациональным одобрением английского языка в качестве третьего языка в учебной программы. Тот факт, что CLIL переходит от экспериментального и пилотного обучения в НИШ к общеобразовательным школам, вызвал острую необходимость проанализировать взгляды практиков на этот подход в среднем образовании.

В этом исследовании изучались прорыв и проблемы подхода CLIL, а также то, как учителя балансируют и интегрируют английский язык в сценарий CLIL. Для проведения данного исследования использовался качественный метод исследования и полу структурированные интервью. Целенаправленная выборка использовалась для отбора 8 учителей, которые участвовали в онлайн-интервью один на один. Результаты показали, что большинство участников положительно восприняли подход CLIL и связали его с такими достижениями, как мотивация, перспективы и квалификация учителей. В ходе исследования было выявлено несколько проблем, таких как владение английским языком, онлайн-обучение, обучение CLIL, трехъязычное образование и отсутствие учебных материалов. Ответ на второй вопрос исследования был найден с помощью Coyle (2008) 4 С фреймворка и результат показал, что большинство учителей рассматривают два блока структуры как Контент и Познание. В то время как только несколько респондентов неявно учитывали все 4 компонента концепции 4С в своих уроках. Подводя итог, можно сказать, что эти результаты способствуют лучшему пониманию текущего состояния подхода CLIL и могут помочь заинтересованным сторонам в сфере образования, как лицам,

определяющим политику, и практикам принимать более обоснованные решения для более

эффективной передачи подхода CLIL из пилотных школ во все средние школы.

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Chapter 1: Introduction

Even since the Soviet era, the education system in Kazakhstan has been changing following a series of educational policies, including language policy. Currently Kazakhstan is implementing a trilingual policy, which includes teaching STEM subjects through English in line with the CLIL approach. The Trilingual policy is one of the most important reforms introduced in Kazakhstan, as its main goal is the development of high linguistic competence in three languages: Kazakh, Russian and English. The initiator of the trilingual education policy was Elbasy Nursultan Nazarbayev, who introduced the project "Trinity of languages" in 2007. (Nazarbayev, 2012) The first president of the Republic of Kazakhstan, Nursultan Nazarbayev (2012) stated that Kazakhstan needs to work on a breakthrough in English acquisition as this language could create great opportunities for every citizen. Based on the updated curriculum, English should be used for teaching Science, Technology, Engineering, and Mathematics — STEM— (Information Analytical Center, 2016). Within the implementation of teaching STEM subjects through English, CLIL training is provided for those teachers for implementation of this methodology in classrooms (Ministry of Education and Science [MoES], 2010).

The research site of the study is one secondary school where trilingual education has started to be implemented recently and CLIL approach has been used by STEM teachers for more than one year. A qualitative research approach has been used to find answers for the research questions. Firstly, this research has considered all possible challenges and breakthroughs of CLIL implementation in one secondary school in Astana. Secondly, the study has aimed to analyse teachers' views on the question on the balance between language and content in a CLIL scenario.

The Coyle (2008) 4 C's framework was chosen as the main framework for this study that helped to answer the mentioned research questions. The 4 C's framework considers four main components of the framework as Content, Cognition, Communication and Culture and the

interrelation of all components. The data from the study revealed that first block of the framework content is viewed as an important component of lessons where the focus is on the topic and the subject matter. The second block of the framework, Cognition, has appeared in the data coming from some participants who mentioned importance of progression from Lower Order Thinking Skills (LOTS) to Higher Order Thinking Skills (HOTS). While, only few study participants implicitly referred to Communication and Culture and showing a clear understanding of the relationship among all the elements integrating the 4 C's framework.

Context of Kazakhstan

Since this study concerns the implementation of CLIL in secondary school in Astana, the context of this study will be focusing on historical factors that led to the implementation of this approach, CLIL implementation in the NIS sector then it will discuss the issues related to CLIL implementation in medium secondary schools.

The first president Nursultan Nazarbayev (2012) in his annual address stated that the one of the main priority of independent Kazakhstan is education and acquisition of English language considered to be essential in entering the global arena. Consequently, in Kazakhstan, trilingual education became "one of the main trends in the education system" (MoES, 2013, p. 4). The CLIL is considered to be one of the main strategies for the realization of the ambitious educational plan on the promotion of the trilingual policy of Kazakhstan (Nazarbayev, 2007).

In Kazakhstan, three languages as Kazakh, Russian and English were taught as language subjects but using these languages as medium of instruction for different subjects was the part of the new policy following examples of the Basque Country in the European context, or Brunei in Asia (Karabassova & San Isidro, 2020). This model of the trilingual education in Kazakhstani context started its implementation from NIS, Daryn, and Kazakh-Turkic lyceum (KTL) in the early 2000s (Yakavets & Dzhadrina, 2014). In the NIS context, CLIL was defined as one of the

significant component of the trilingual education policy. According to Annual report of NIS, in

the 2014-2015 academic year, the subjects of primary and high schools are being taught in three

languages:

4 subjects in the Kazakh language: "Geography", "History of Kazakhstan",

"Kazakhstan in the modern world" and "Basics of Law";

2 subjects in the Russian language: "World History" and "Informatics";

7 subjects in the English language: "Mathematics"; "Chemistry", "Physics", "Biology",

"Informatics"; "Economy", "Global Perspectives and project work." (Autonomous

Educational Organisation Nazarbayev Intellectual Schools [AEO NIS], 2014, p. 13).

NIS has gained legal status and became the Autonomous Education Organization of

Nazarbayev Intellectual Schools (AEO NIS), hence, they were taken full academic freedom and

autonomy (Shamshidinova et al., 2014). Then, the piloting schools as NIS was expected to give

support for other Kazakhstani schools on gradual implementation of the CLIL approach (AEO

NIS, 2013). Thus, NIS's goal was to transmit their knowledge and experience to other

mainstream schools of Kazakhstan. Subsequently, the state schools in Kazakhstan have been

implementing a CLIL approach in extra-curriculum lessons (Huertas-Abril & Shashken, 2021).

Moreover, there has been an urgent demand for teachers who are eligible to teach science

subjects in English since the introduction of the Trilingual Policy in Kazakhstan. Thus, the NIS

central office conducted the training and provided resources for teachers to teach through CLIL

approach. The teaching materials as guidelines suggest teachers to improve academic language

and use different CLIL strategies as scaffolding, translanguaging, and adjustment of texts

(Karabassova, 2018). Moreover, from 2016 professional development programs such as Orleu

and Ustaz were working on preparation of STEM teachers to conduct lessons within English

medium of instruction. Thus, the training for teachers in Kazakhstan included CLIL into learning content (Goodman & Karabassova, 2018). Karabassova (2018) says that even though CLIL had a minor role in following training the certificate of CLIL training was considered a requirement for STEM teachers that was established by the Ministry of Education and Science.

To sum up, the CLIL approach is seen as an essential tool for the implementation of trilingual education policy in Kazakhstan. The piloting schools as NIS has started to transmit their experience to the state schools by provided training and teacher guidelines. It is precisely for this reason the Kazakhstani secondary school context is especially interesting to undertake research on analysis of CLIL practices.

Statement of the Problem

Many teachers misunderstand and reject the significance of balanced integration of content and language in the CLIL classroom (Mehisto et al., 2008; Smagulova, 2015; Coyle, 2005). Mehisto et al. (2008) finds that none of the teachers in his study thinks that CLIL needs the balanced integration of both language and subject; therefore, the implementation of CLIL is not systematic. Thus, reaching the goal of learning both the language and content simultaneously is a hard task for the CLIL approach. Smagulova (2015) claims that most of the teachers do not understand how to apply CLIL in subject classes that are taught in English. It is seen that issues regarding trilingual education and especially CLIL are stated in different sources as well as by Kazakhstani researchers. It is important to point out that special schools such as NIS, Daryn, and Kazakh-Turkic lyceum (KTL) started to implement trilingual education in the early 2000s (Yakavets & Dzhadrina, 2014) . As Kazakhstan has started to implement CLIL, it is important to know how teachers apply CLIL. According to Karabassova (2018), the study she conducted among Nazarbayev Intellectual School(NIS) teachers revealed that the interviewed teachers did not know that, as CLIL teachers, they are also responsible for language acquisition and not only a subject. Then, in 2015 the first president of the Republic of Kazakhstan N. Nazarbayev

announced that trilingual education would be implemented in all mainstream schools. Thus, it is important to observe the situation in such mainstream schools in Kazakhstan for gathering information about CLIL practices and challenges because they are not investigated on this issue.

Purpose of the Study

As Kazakhstan has started to implement CLIL in state schools, it is important to explore teachers' views on putting CLIL into practice. This study specially focuses on one secondary school were CLIL implementation started from STEM extra-curricular lessons and planned to implement CLIL in curricular lessons. The purpose of the study is to explore what breakthroughs and challenges teachers are facing in the implementation of CLIL approach. Within challenges, teachers will provide their recommendations for further improvements as they can see difficulties in practice. At the same time, within breakthroughs they will show the positive sides of CLIL implementation. Then, the research will explore how teachers integrate and balance language use in CLIL scenario. In this light, the current study address the issue of CLIL implementation in one secondary school in Astana.

Research questions

RQ1. What are the breakthroughs and challenges of the implementation of CLIL in Kazakhstan?

RQ2. How do teachers integrate and balance language use in the CLIL scenario?

Significance of the study

It is important to mention that most studies done on CLIL practices are not done in the Kazakhstani context. Karabassova (2018) mentioned the issue of subject teachers applying CLIL methodology. However, the mainstream schools are not investigated to the issue of practicing the CLIL approach, and compared to NIS schools they could have more challenges. Thus, this thesis

work would have a significant contribution to the Kazakhstani research literature. Also, this work will be used as a recommendation and indicator for policymakers on the topic of applying CLIL in mainstream schools. The possible challenges stated by participants could be considered by policymakers and the government for making some changes toward improvements of reforms or programs.

Thesis outline

This thesis is divided into six main chapters that starts with the introduction where background information and context of the study is given. Then, it follows with a literature review chapter that consists of main concepts related to the study. The fourth chapter is about the methodology of the study and it is followed by the findings chapter. The next chapter is dedicated to the discussion of the findings and related it to the present literature. The conclusion is presented in the last chapter and it shows the main findings, provides recommendations for main educational stakeholders, and describes limitations and implications of the current research.

Chapter 2: Literature Review

The chapter overviews the key terms and concepts of the paper starting from the definition of Science, Technology, Engineering and Mathematics (STEM) and Content and Language Integrated Learning(CLIL), then **the history, conceptualization and components of CLIL.** Then, further moving to the challenges in implementation, especially curriculum integration and teacher difficulties. In addition, breakthroughs related to the implementation of the CLIL will be discussed. Following this is a review of previous studies on implementation of the CLIL and challenges of teachers in CLIL classrooms. The literature review will focus on the studies conducted by

Defining terms

The recent definition of STEM is stated as being the interdisciplinary pedagogical integration of all components of the four subjects of science, technology, engineering and mathematics (Hinojo-Lucena et.al., 2020). This paper presents STEM teachers as those who teach the subjects of science, technology, engineering and mathematics.

Content and Language Integrated Learning (CLIL)

CLIL is "a dual-focused educational approach in which an additional language is used for the learning and teaching of both content and language" (Coyle et al, 2010, p. 1). Based on this definition, Fortanet-Gomez (2013) said that the usage of an additional language in learning and teaching both content and language simultaneously is a characteristic of the CLIL approach. In this respect, Dalton- Puffer (2011) viewed CLIL as an "educational approach where curricular content is taught through the medium of a foreign language" (p. 183). Also, Barwell (2005) defined CLIL as an approach that provides support to students who are learning a language and subject at the same time. Furthermore, Coyle (2005) mentioned an important point which is that CLIL is not used for the acquisition of language by expanded content. Therefore, CLIL is not teaching subjects by translating from the first language (L1) to the target language; it is more

than this. Consequently, CLIL is an approach that combines aspects of both content and language in teaching and learning in the CLIL classroom. The CLIL approach is based on principles of communicative language teaching and a task-based teaching approach (Graves & Garton, 2017). San Isidro (2018) highlighted commonalities of CLIL practices in Europe as these focus more on language acquisition rather than on language learning as, in real life situations, this approach is considered   as an important ability to use language.

Dalton-Puffer and Smith (2011) generalized the main features of CLIL that distinguish it from other teaching approaches. Firstly, in the CLIL approach, foreign language or lingua franca is used but it does not consider the usage of a Second Language (L2). Also, learners will use the language of instruction mainly in the classroom environment as it is not a language that they use commonly in everyday life. The English language is considered as a prevailing CLIL language. Secondly, the acquisition and knowledge of literacy skills in the mother tongue of students is prioritized rather than the implementation of the CLIL approach. In addition, most of the CLIL teachers are mainly content rather than foreign language teachers, and they are commonly non-native speakers of the language of instruction. Moreover, CLIL lessons are included in the content lessons' curriculum where the target language is taught as a subject by language teachers. San Isidro (2018) said that even if CLIL is an approach that considers implementation through diverse languages, English is considered the dominant language in CLIL implementation.

Conceptualisation of CLIL

The issue about conceptualization of the CLIL has been debatable since the very beginning. There was a question whether CLIL should be considered as a methodology or an approach. The literature shows the description of CLIIL in pedagogical terms as somewhat confusing, ambiguous and without concord. According to Marsh et al. (2005, p. 5) definition CLIL broadly described as a generic 'umbrella' term to refer to 'diverse methodologies which

lead to dual-focused education where attention is given both to topic and language of

instruction'. This definition of CLIL refers to 'diverse methodologies' then updated by Mehisto

et al. (2008, p. 12) by referring CLIL to an 'umbrella term covering a dozen or more educational

approaches. Then, Coyle (2007, p. 545) who created four Cs Framework stated that CLIL is an

'integrated approach where both language and content are conceptualised on a continuum

without an implied preference for either'.

Then, CLIL is conceptualized as a dual-focused educational program in which an

additional language is used as a medium of instruction and acquisition of non-language content.

The following definition of Coyle et al. (2010, p.3), 'CLIL is an educational approach in which

various language-supportive methodologies are used which deal with a dual-focused form of

instruction where attention is given to both language and content' led to the closure of debate.

Since CLIL consists of a set of methodologies, it cannot be a methodology.

CLIL History and Components

The term CLIL came to existence in Europe starting from the 1990s by a group of

specialists from various backgrounds as researchers, educational administrators and practitioners

(Marsh, 2002). From that time, the many initiatives for the maintenance of CLIL had financial

support from the European Commission and the Council of Europe because of the significance

of CLIL for the development second-language (L2) education and bilingualism (Cenoz et al.

2013).

The different varieties of CLIL became established in different countries as the CLIL

movement developed. On the European level, the variety of potential models necessitated a

revisioning of bilingual training as per public and territorial settings – clearly CLIL in

Luxembourg, Scotland or Switzerland will contrast fundamentally from CLIL in Sweden, France

or Spain because of social and cultural contrasts which includes phonetic variety and attitudes

towards English (Coyle et al., 2010). According to Baetens-Beardsmore (1993), "no model is for export" but sharing thoughts and coordinated effort is essential for the implementation of CLIL (p. 3).

4 C Framework

This part of the literature review deals with the conceptual framework. Figure 1. shows The Coyle's 4 Cs framework which is used as a conceptual framework of the study. This framework "focuses on the interrelationship between four Cs" (Coyle, 2007, p. 550). Thus, Coyle (2008) developed the 4Cs Framework with a view to conceptualize the interrelation existing between the various kinds of learning taking part in CLIL scenarios. Based on this theory, CLIL is concerned with content (understood as subject matter, themes, topics, or cross-curricular connections) and focuses on the interrelationship between content itself (subject matter), communication (language), cognition (thinking) and culture (awareness of self and 'otherness'). The aim of the 4 C is to create the synergies of integrating learning (content and cognition) and language learning (communication and cultures).

Coyle et al. (2010) described the seven principles that explain the 4Cs framework. A first principle states that content not only needs to be considered in the light of the acquisition of new knowledge, but that also, content is about developing learners' skills and understanding and creating their own knowledge. Secondly, content and cognition (thinking and learning) needs to be connected. Thus, the linguistic demands of content need to be analyzed with the purpose to enable learners to generate their own knowledge. The third principle says that cognition also needs to be evaluated based on linguistic demands. Then, the fourth principle describes language features in CLIL by saying that it needs to be transparent, accessible and connected to the learning context. The fifth principle outlines the importance of interaction in the acquisition process, especially in situations where the medium of instruction is a foreign language. Following the sixth principle which describes the interrelation of language and culture and states

the importance of intercultural awareness. The last principle says that context variables should be considered for the purpose to make implementation of the CLIL approach effective.

Furthermore, the role of each block in the 4 C framework in the CLIL scenario will be explained. The first block that will be discussed is C for Content. According to Do Coyle (2008), Content focuses not only on acquiring skills and knowledge, it is about the learners developing skills and creating their own knowledge. Meyer (2010) states that teachers and material writers need to focus on developing content through a unit which is a sequence of several lessons on certain topics. Also, in a CLIL lesson textbook or syllabus there is a division of topics into more essential units with real tasks and real results. This issue is not problematic for subject teachers in CLIL, however, they must consider progress, growth, repeated and recycling of each unit's inherent language. While, language teachers in CLIL must include tasks for working with real content, subsequently, understanding the development of content. In addition, language teachers must understand how inherent language sustains all learning context. Based on the second principle proposed by Do Coyle(2010), acquiring content knowledge, skills and understanding related with learning and thinking(cognition). Cognition is considered to be, also, one of the four components in designing and implementing CLIL. In terms of CLIL lesson planning and implementation, there is an inextricable connection between Cognition and Bloom's Taxonomy (Anderson et al., 2001). In Bloom's Taxonomy, the thinking skills are classified from Lower Order Thinking Skills (LOTS) to Higher Order Thinking Skills (HOTS).

The next pillar of this framework is Communication. It is important to note that Communication is directly related to the Language and needs to be discussed more deeply due to its guidance in answering the second research question on the role of Language in CLIL. Coyle et al. (2010) divided Communication into three elements, called Language Trypth, language of learning, language for learning and language through learning. This Language Trypth is a fundamental concept in conceptualization of language in CLIL.

Language of learning(CALP) is the language learners need to acquire subject related concepts(content) and basic abilities related to it. It considers specific content related language, expressions, vocabulary and grammar. The second element of Language Trypth is language for learning(CALP or BICS) is the language essential for working in CLIL. This type of language is subject-dependent and used for performing pair work and group work. Thus, it has either academic or communicative functions in the classroom. Therefore, language for interaction in a language lesson is different from subject-related language. It is important for teachers to consider grammar issues but they need to prioritize language notions and functions on behalf of interaction. The third component of the Language Trypth is language through learning. In this case, learners organise, build and formulate their own understandings, hence, the language learning process occurs in a more meaningful and deeper way. Thus, students create language knowledge from new acquisition strategies.

Ball et al (2015) states that any discussion about language required for teaching the material needs to clarify the type of language. Thus, in investigating the teaching of STEM subjects in English it is useful to identify the type of language used for characterizing the language involved.

The C for culture is, also, an important part of the 4 C framework. According to Byram et al. (2001) Intercultural awareness and learning is essential to CLIL . Coyle et al. (2010) relates the last block to the question of the 'self' and 'other' awareness, identity, citizenship and development towards intercultural understanding. CLIL is an effective instrument in developing intercultural citizenship and global understanding.

 Thus, this framework is developed for CLIL teachers to plan their lessons. The planning lessons through CLIL approach would help teachers to create content in target language with the consideration of language aspects. Also, students will develop cognitive skills through tasks from LOTs to HOTs and develop their intercultural understanding.

Therefore, this framework was chosen for this study in order to explore the implementation of CLIL scenario focusing on 4 Cs work in the Kazakhstani secondary school. Thus, 4 C framework was used as "a conceptual map which provides a theoretical basis from which to start" (Coyle et al., 2010, p. 42).
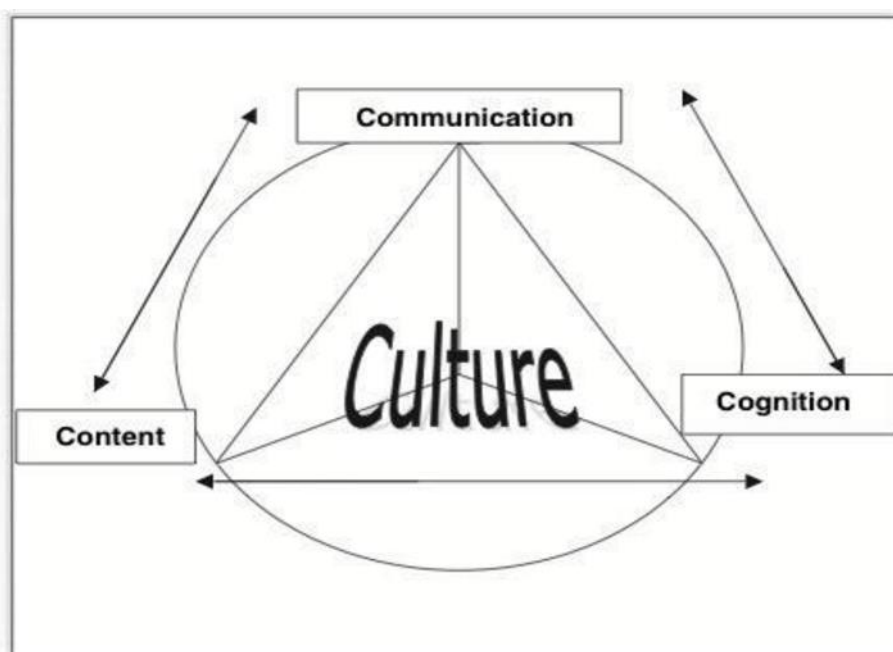
Figure 1. The 4Cs conceptual framework (Coyle, Hood & Marsh, 2010).

CLIL challenges

This section presents the literature review related to the main CLIL challenges faced by teachers as this study's focus group is CLIL teacher. The CLIL teacher challenge that are to be discussed here is *curriculum integration, teaching material and other studies related to the topic of CLIL challenges (Mehisto et al., 2008; Nikula, 2015; Karabassova, 2018; Kakenov, 2017).*

Curriculum Integration. Houmphreys et.al. (1981), defined integrated study as "one in which children broadly explore knowledge in various subjects related to certain aspects of their environment" (p.11). This definition refers to the importance of the development of skills and knowledge in more than a single subject. Shoemaker (1989) described an integrated curriculum as "education that is organized in such a way that it cuts across subject-matter lens bringing together various aspects of the curriculum into a meaningful association to focus upon broad areas of study. It views learning and teaching holistically and reflects the interactive real world". (p. 9)

Palmer (1991, p. 59) explained the different levels of integration and described the following practices:

 • Development of cross-curricular sub-objectives within a given curriculum guide.

• Development of model lessons including cross-curricular activities and assessment.

 • Development of enhancement activities with a cross-curricular focus including suggestions for cross-curricular links following each goal.

 • Development of cross-curricular assessment activities.

• Inclusion of sample planning mind maps in all curriculum guides.

The term 'Interdisciplinary curriculum' is often used as a synonym for the word integration, but also, this term usually refers to the category of curriculum integration. Interdisciplinary curriculum is defined in the Dictionary of Education (1973, p.36;) as ``a curriculum organization which cuts across subject-matter lines to focus upon comprehensive life problems or broad based areas of study that brings together the various segments of the curriculum into meaningful association". This definition shows the similarity with above definitions of integrated curriculum. Jacobs (1989, p.8) defined interdisciplinary as 'a knowledge view and curricular

approach that consciously applies methodology and language from more than one discipline to examine a central theme issue problem topic or experience. Moreover, Everet et. al(2013) defined interdisciplinary curriculum as 'combines several school subjects into one active project since that is how children encounter subjects in the real world-combined in one activity'. All mentioned definitions of curriculum integration views it as a tool for preparation of life-long learners.

It is important to mention the connection between the term integration and CLIL. In the CLIL integration happens between language and content. San Isidro (2009) states that CLIL considers making cross-curricular connections that will affect lesson planning and curriculum design, those cross-curricular connections in CLIL usually happen between content and language.

Curriculum integration is one of the main challenges faced by teachers who were recently introduced to the CLIL program (San Isidro, 2018). The main reason for this is a lack of practice and skill in curriculum planning, as the CLIL program requires work on an integrated design which includes features of the curriculum as goals, standards, contents, and assessment criteria.

Literature shows a small number of studies regarding teachers' opinions conducted in various contexts. Those studies show high levels of satisfaction, motivation and commitment(Ackerl 2007; Coonan, 2007; Czura et al., 2009; Mehisto & Asser, 2007; Wiesemes, 2009). Moreover, there are studies focused on the teachers' opinions about challenges in curriculum integration and impact on different languages of instruction (Barreiro & San Isidro, 2009; Calvo & San Isidro, 2012). Studies regarding teachers' opinion addressed three issues: 1) challenges in integration of content and language, the relation between various languages of instruction and the subject-related literacy/pluriliteracies development (Barreiro & San Isidro, 2009; Calvo & San Isidro, 2012); 2) the role of language teachers as mentors and design of integrated curriculum (Barreiro & San Isidro, 2009; Calvo & San Isidro, 2012; Infante et al., 2009); and 3) support necessity from educational authorities (Pladevell-Ballester, 2015).

There are three types of curriculum integration; these are known as multidisciplinary, interdisciplinary, and transdisciplinary described by Drake and Burns (2004). These three types of curriculum integration were discussed by San Isidro (2018):

1. Multidisciplinary approaches center essentially on the subjects or disciplines. A theme or topic is managed with various areas. In this approach, the same subject tends to address through the lenses of diverse subject points. Also, in this approach objectives or standards are set by teachers from their own subjects around a topic or theme. Multidisciplinary integration would be in the case where the various subjects considered the topic, for example, respect for the environment.

2. As regards interdisciplinary integration, instructors organize the educational programs around common knowledge over subjects or disciplines (Lyon, 1992). They put together the common learnings inserted within the discipline's interests, abilities and ideas. A great illustration of this kind of educational integration is CLIL, in which one subject (arts and crafts, mathematics, physical education, or social science) and one language area are formally arranged together. Contents, goals, and assessment from one subject area are included into the other one.

 3. Concerning the transdisciplinary approach to integration, educational programs are constructed around learner's questions and concerns (Canter & Brumar, 2011). Applying interdisciplinary and disciplinary skills in real-life situations can help students to develop life skills. Also, Transdisciplinary integration considers the implementation of project-based learning. CLIL is considered to be between interdisciplinary and transdisciplinary integration (San Isidro, 2016).

With regard to the transdisciplinary approach to integration, teachers organize the curriculum around student questions and concerns (Canter & Brumar, 2011). Students develop life skills as they apply interdisciplinary and disciplinary skills in a real-life context. Transdisciplinary integration is closely linked to task and project based learning. Projects are

organized around a driving question, an inquiry based context, or a topic related to several

subtopics, and students carry out a variety of tasks that seek to meaningfully address this

question or topic. Students engage in learning knowledge and skills through an extended inquiry

process structured around complex, authentic questions and topics, as well as carefully designed

products and tasks. This process can last for varying time periods and, although it is usually

designed from a specific subject area, it relates to multiple subject areas as students make

progress in meaning-making.

San Isidro (2018) says that language is integrated in the broad sense of curriculum and

language used as a tool for learning content. Also, CLIL is considering more acquisition of

language than learning the language as language is treated as a tool for students to use it in the

everyday learning process. The teachers could prioritize content over language due to challenges

with curriculum planning. San Isidro (2018) states that for a teacher with a lack of experience in

CLIL it is challenging to make curriculum integration. Because those teachers would be

responsible for assigning content and linguistic goals, standards, contents, and assessment

criteria. It is important to mention that following challenges with curriculum design could be due

to the lack of consistency described by Nunan (1988) as principles of curriculum design are not

tried to be used in designing language programs (as cited in Cullian, 2016). Thus, curriculum

design in CLIL lessons is challenging for subject teachers and inexperienced teachers could

assign less attention to language. As CLIL implementation is new for Kazakhstan most of the

teachers are inexperienced in planning curriculum for CLIL lessons. Also, language programs

are not trying to use principles of general curriculum design which results in unsystematic

curriculum integration.

Mehisto et al. (2008) discussed CLIL as learning language and content simultaneously

considered multiple focus. Because students in subject classes are integrating language and

language learning students added the content into the program. Thus, those students with

multiple focus had challenges in learning processes and Mehisto et al. (2008) investigated this issue as he believed that multiple focus could be the reason for educators' disjunctions. As a result, the study of multiple focus showed that their insufficient accent made the importance of integration of both content and language in literature and education. Furthermore, many CLIL teachers are using the content focused model in the classroom. There could be two reasons for this phenomenon: misunderstanding from the CLIL program or ignorance of the importance of integration of content and language as they treat themselves, skilled educators, hence, misunderstand the need for language acquisition. Therefore, it is important to investigate the Kazakhstani context in the issue of the disjunction of CLIL practices for future improvements.

Karabassova (2018) conducted research on the top –down implementation of the CLIL in the network of NIS. The result of the study showed that content teachers are considering content and language as an independent endeavor. Also, the teachers mentioned their concern about students learning outcomes. Because of the language deficit, teachers had a challenge in transmitting all the amount of content they needed to cover. It is important to state that Karabassova (2018) says that this case study of CLIL implementation in NIS is an exclusive one because those schools were focused on challenging Science and Mathematics oriented programs, hence, respondents questioned the need for CLIL implementation in such schools.

Teaching material. Furthermore, the lack of teaching material is one of the last but not least issues regarding the ineffective implementation of CLIL. Based on a study conducted by Kakenov (2018), teachers in mainstream schools in Kazakhstan are following standard teaching resources as manuals and books proposed by the Ministry of Education and Science of Kazakhstan. While teachers working in NIS which is implementing the CLIL approach facing challenges as making lesson materials following teaching strategies involved in CLIL. As result, they have increased workload as there are no books designed based on the CLIL approach for usage during lessons.

Also, Bovellan (2014) states that top quality resources influence learner's success in the subject as material designed by teachers cannot always face high standards. Therefore, it is important to consider proper teaching materials for being able to implement the CLIL approach in a proposed effective way. Within the lack of teaching material related to CLIL makes teachers struggle with the preparation of material, hence, there is the possibility that teachers would focus more on content as the school books are developed for content learning purposes.

CLIL breakthroughs

According to Coyle (2008), the CLIL approach challenges learners to work with a high quality acquisition approach and it shows more context where the degree of motivation and the necessity to learn an FL is increased. The most important issue is the CLIL impact on motivation of both students and teachers. In Coyle's study (2008, p. 11) one of the participants said 'the benefits for me as a teacher is that it's interesting. It's something new that I have to learn for myself'. Thus, the study shows that motivation for learning in both teachers and students can be increased with the help of CLIL.

Also, CLIL can impact on the development of pluriliteracies and meaning-making (Meyer et al., 2015). However, San Isidro and Lasagabaster (2018) questioned the positive effect of CLIL when analysing impacts of CLIL on the multilingual settings and longitudinal basis. They said that positive effects can be associated with various methodological aspects as task and project-based learning in collaboration, curriculum integration and interaction-based scenarios or multilingual learning approach. Thus, there are future prospects for research on analysis of impact of pedagogy on effect of CLIL approach, in terms of various languages of instruction development and **pluriliteracies**/subject-related literacy/meaning-making development (Meyer et al.n 2015) and on learning content.

Trilingual Education

In Kazakhstan, the phased implementation of trilingual policy has commenced with the project "Trinity of Languages" (Nazarbayev, 2007). The initiative to implement this new project was proposed by the First President, Nursultan Nazarbayev, who emphasized the importance of the three languages as Kazakh, Russian and English. Trilingual education is considered as one of the fields of multilingual education which means the development of three languages competence in education (Bakytzhanova, 2018). Based on the State Program of Languages Development and Functioning for 2011-2020 (MoES, 2010), the number of Kazakh speakers will increase by 95%, the number of Russian speakers will increase by 90% and the number of English speakers will increase by 20% in 2020.

According to the State Program of Education and Science Development in the Republic of Kazakhstan for 2016-2019 (2016), the government initiated the development of trilingual education in Kazakhstan schools starting from implementation in 20 Nazarbayev Intellectual schools (NIS), 33 experimental schools for gifted children "Daryn", 30 Bilim Innovation and Lyceums (Kazakh-Turkish lyceums). The trilingual education model in Kazakhstan was modified within time (Karabassova, 2018). The earlier model of trilingual education considered using all the three languages, Kazakh, Russian and English for teaching content subjects (MoES, 2014). The current model (Nazarbayev 2017) suggests that STEM subjects are taught in English in high schools. Then in 2018 it was decided that schools depending on their capacity will choose the number of subjects taught in English (Karabassova, 2018).

Methodology

The chapter provides information about the methodology applied in the current study. In order to gain detailed information from teachers on implementation of CLIL approach the qualitative method was used, specifically a semi-structured interview. This chapter focuses on the description and justification of the research design that was used to respond to the following three research questions:

RQ1: What are the breakthroughs and challenges of CLIL implementation in Kazakhstan?

RQ2: How do teachers integrate and balance language use in a CLIL scenario?

This chapter centers on "how the problem was investigated and why particular methods and techniques were employed" (Bell, 2005, p. 13) to then discuss the research design, sampling, data collection tools, procedures and analysis, as well as ethical considerations.

Research design

In order to contribute on the research on the topic of CLIL implementation in Kazakhstan the qualitative research was chosen, because qualitative research helps to see the world and contributes to the world's transformation process (Denzin &Lincoln, 2013).

The study is focused on exploring teachers' view on CLIL implementation in secondary school. Thus, quantitative approach is considered to be inappropriate to this particular research, due to its focus on numerical data (Creswell, 2012).

Since the goal of the study is investigating an issue the researcher is concerned about (Stake, 2020) and the subject itself is of primary interest, the most suitable design will be a case study, more specifically an intrinsic case study. The intrinsic concern to the issue of CLIL practices in usual schools raised after 1-year experience in one of them.

Research site

The research was conducted in one of Kazakhstan's secondary schools. There were several reasons for choosing this particular school. In 2008 Nazarbayev Intellectual Schools were established as a platform for "testing polylingual educational model and educational innovations" (as cited in Shamshidinova et al., 2014, p. 75). Moreover, NIS was considered a role model for other schools in order to diffuse their experience to other schools (Shamshidinova et al., 2014). Then, in 2015 the first president of the Republic of Kazakhstan N. Nazarbayev announced that trilingual education would be implemented in all mainstream schools of Kazakhstan. Thus, a certain mainstream school, where STEM subjects started to be taught in English, in Astana was chosen for this current qualitative study. The reason for choosing this school is due to the fact that following school STEM teachers attended CLIL training and have started to implement it in the classroom.

Sampling

The central phenomenon under analysis in this study is teaching strategies. This research aims to investigate how CLIL is implemented and its practices in a mainstream school of Kazakhstan because such schools are in the process of implementing trilingual policy. The target population was secondary school teachers. The type of sampling was purposeful sampling. Patton (2002) states that purposeful sampling is an effective way of collecting samples that would give rich data results. Thus, the interviews were held among mainstream school teachers in Kazakhstan where the trilingual education started its implementation. Thus, it is important to observe the situation in such mainstream schools in Kazakhstan for having information about CLIL practices and challenges because special schools were already investigated for these issues.

Based on the maximum variation technique, the interviewees were selected by the criteria of training as Professional Development Program (PDP), CLIL training, Language proficiency certificates (level acquisition) and finally who studied abroad. The first criterion that

all needed to meet is that teachers need to have at least 2 years of teaching experience because

they need to have some practice in teaching for being able to answer the questions. The

established criteria for focusing on those who had at least one of the listed pieces of training is

for making sure that they have some skills in teaching CLIL. It was known that STEM teachers

from chosen secondary school had passed through a 1-year English course where 72 hours of the

course was to learning the CLIL approach.

Characteristics of Participants

Overall, eight participants were selected for the study. All of the participants were STEM

teachers, in particular: Biology, Chemistry, Computer Science and Physics. The gatekeeper, who

was not informed on who of these teachers took part in the research, gave the numbers of

teachers. The participants were recruited on a voluntary basis and contacted me after receiving

the recruitment message. Then, the recruitment message was sent to those particular teachers.

The names of the teachers were changed into participants' numbers for anonymity. Also, the age

range category is considered in the table for characteristics of participants. In addition, the

sampling criterion as teaching experiences was included to the table.

Table 1. Information on study participants

Participant number	Subject	Age	Teaching experiences (in years)
P1	Informatics	45-50	20

P2	Informatics	30-35	6
P3	Biology	25-30	5
P4	Chemistry	45-50	21
P5	Physics	25-30	3
P6	Chemistry	40-45	15
P7	Biology	30-35	10
P8	Biology	40-45	15

Data collection instruments

The most popular data collection tool in qualitative research is interviewing (Jamshed, 2014). This research was conducted through interviewing with a view to finding answers to research questions. Particularly, the data for research were collected by the use of a semi-structured one-on-one approach.

The most popular data collection tool in qualitative research is interviewing (Jamshed, 2014). This research was conducted through interviewing in order to find answers to research questions. Particularly, the data for research was collected by the use of a semi-structured one-on-one approach. Creswell (2012) described the one-on-one interview as a process of taking interviews from one person who would answer the questions. The semi-structured approach was used to be able to ask questions for additional information. Using the research conducted by Karabassova (2018), a two-phased interviewing procedure was used with a view to clarifying

and extending issues encountered during the first interview. The interviews were audio-recorded. The permission from participants for audio-recording was taken through the consent forms.

Seven semi-structured interviews were conducted with CLIL teachers. The interview protocol comprised 13 questions and some follow up questions specific to the responses. The main focus of the questions was teachers' conceptualization of CLIL, specifically on the integration of the language scenario, teachers' view on implementation of the CLIL within its challenges and breakthroughs.

After receiving permission from the Ethics Committee to carry out a study, research was started from sending e - mails to possible participants as CLIL teachers in a mainstream school in Astana. Then, a letter was sent to the potential participants, containing information about the researcher as a MA student in Nazarbayev University. Also, information about research as aims and consent form were attached to the letter.

Before conducting the interviews, participants were informed about ethical considerations and were also told that they can withdraw or stop their participation anytime they want. When teachers agree to participate in the research, they were asked to have appointments via Zoom anytime convenient for them. In the first appointment they were again informed about the aims of the research and ethics consideration. Then, they were asked to sign a consent form and send it through email.

Since the interviews were conducted through Zoom, all participants were asked for their consent to be recorded. The interviews lasted approximately from 30 to 40 minutes. Participants had a choice to be interviewed in the language they feel comfortable to speak: Kazakh, Russian or English.

Data Analysis

Firstly, data was transcribed from audio recorder to written format. Therefore, the interview audio was transcribed using voice typing features in Google Docs. This transcribing technique was useful for saving time spent on the transcription process. In terms of anonymity, Google Docs is private, hence, following transcripts and recordings were not seen or heard by anyone. Secondly, after the transcribing process was complete, the next stage was coding. Then, transcribed data was coded following the In vivo coding rules. Saldana (2011) claims that in vivo coding is a useful tool for beginners of qualitative research which consists of words and phrases taken from the respondent's answers. Thus, in this research In vivo coding was used because of researcher's first experience in coding qualitative data.

Data collection tools

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The interviews will be audio-recorded. The permission from participants for audio-recording will be taken through the consent forms.

Ethical Considerations

This qualitative research was conducted by considering all ethical issues. According to The Ethical Standards of American Research Association, "researchers respect the right, privacy, dignity and sensitivities of the research population and also the integrity of the institutions within which the research occurs" (2002, p 3) therefore, in this research participants would be anonymous for their privacy.   Each participant was advised that participation is voluntary and he/she can interrupt, stop, or skip the question at any point of the interview or withdraw their data from the study at any time. The participant was advised that no names or personal information was recorded and revealed during or after the interview. Each interviewee had a numerical code assigned instead of the name.

Moreover, consent forms were provided to participants with detailed information of the current study and contacts of supervisor and researcher. The interview transcripts were only used in the data analysis part and not used for any other purposes. All information about participants that can uncover participants' personal information and identity were coded and changed. The data was retained on the researcher's private password protected computer and secured in separate password protected files to ensure the identity of participants is known only to the researcher.

The interviews scheduled on time that were convenient to participants and I tried to be flexible. Also, I considered time that did not interfere with other participants.

Chapter 4: Findings

This chapter presents the results of the qualitative study obtained with the help of 8 semi-structured interviews with STEM teachers to address two research questions. They are: what are the breakthroughs and challenges of CLIL implementation in Kazakhstan, and how do teachers integrate and balance language use in CLIL scenario. The findings will be presented under these two research questions.

After analyzing interview transcripts the Thematic Map was created as shown in Figure 1. Thus, findings formed four main topics: "Challenges", "Breakthroughs", "4C Framework", "Teacher's view" and "Recommendations". This chapter provides some insights regarding the implementation of CLIL in one mainstream school in Astana by revealing some breakthroughs and challenges. Specifically, findings demonstrate breakthroughs in CLIL associated with students' and teachers' motivation, prospects, and improvement in teacher qualification. Also, analysis of data reveals that the participants faced different kinds of challenges related to low English proficiency, online-learning, CLIL training, High Speed of implementation, lack of material. Then, findings demonstrate how teachers integrate and balance language use in CLIL by analyzing it within the 4 C framework. The last part of this chapter demonstrates teachers' views and recommendations in applying CLIL.

Breakthroughs

This section discusses the breakthroughs in applying CLIL in secondary school. Three subsections emerged based on the teachers' answers from the interview: motivation, prospects, and teachers' qualifications.

Motivation

This first subsection reports the findings regarding increased motivation due to implementation of CLIL in the classroom. According to some participants, the usage of CLIL in

teaching subjects had a positive impact on students' motivation. One of the participants noted the advantage of using CLIL for discovering and opening some specific sides of the content. Thus, students are becoming motivated to learn subjects by asking questions, speaking with teachers and having debates with their classmates. In addition, other participants also shared insights about the increase of students' interest in learning subjects in English.

Extract 1

Students' interest is increasing in learning. There are some specific sides of the subject content for example, and teachers knowing the CLIL approach will be able to open those specific details. It is good that students know to have an interest in learning by asking questions, having debates, and having a dialogue with the teacher (Participant 6, December 13, 2020).

Extract 2

The advantage is the increase of students interest in learning, as in this time it is very important to know language also biology is very interesting and knowing it in English makes it more interesting (Participant 8, December 18, 2020)

Thus, the increase in learning interest is seen as a positive outcome of applying CLIL.

Prospects

Further analysis of the data showed that one of the breakthroughs associated with CLIL implementation is prospects. A common view amongst interviewees was that knowing the STEM subjects in English would positively influence student's prospects. Besides, learning subjects in

English considered helping in achieving success in the international arena. In this case, the participant described CLIL as a ladder to obtain satisfactory results in learning the subject in English.

Extract 3

There are a huge amount of materials and information for STEM subjects in English and it helps for students' development in the future (Participant 2, December 9, 2020)

Extract 4

The English language is important for the future of students. I am not teaching 200% in English but I can create lessons with the addition of English terminology. As English is essential in this time. (Participant 3, December 10, 2020)

Extract 5

For students, it is important to learn English to go to the international arena of knowledge. For example, a very good chemist who knows only Kazakh can't go to the world arena. Thus, knowing chemistry in English is necessary. CLIL is considered to be the primary ladder to achieve high results in a particular subject. Secondly, CLIL helps to broaden their horizons. The informational potential will increase (Participant 5, December 12, 2020).

Pedagogical skills

The third theme that emerged from the responses about CLIL breakthroughs is related to the development of pedagogical skills. The findings showed that one of the participants mentioned the advantage of CLIL in terms of improving teacher's qualifications by gaining

additional knowledge in the area of education. Thus, the trainings and courses for improving language skills and learning CLIL help teachers to develop their teaching skills. Extract 6

It is also good for teacher in increasing their qualification (Participant 8, December 18, 2020).

Moreover, most of the teachers started to list different teaching strategies as matching anagram, puzzle, and writing the essay that they learned from CLIL. In addition, one of the participant said that now creates tasks for the formative assessment without any struggle.

Extract 7

My teaching strategy changed after I introduced CLIL to myself. I started to make more structured lessons. I learned many strategies. For example, True/ False and others. Formative assessment changed a lot. For example, in the past, we gave text and five questions. However, know there are exercises on matching anagram, puzzle, the essay also, thus I improved formative assignments (Participant 6, December 13,2020).

One more participant who mentioned improvement in teaching said about the effectiveness of structuring lessons with CLIL. The CLIL book from Cambridge was helpful for this teacher in teaching chemistry, for example, the book has texts with logically structured tasks. Thus, with the help of that CLIL book teacher started to give tasks for students in learning concepts by themselves.

Extract 8

Conducting chemistry lessons in English is more effective, as the resources on CLIL are logically structuring the process of teaching and learning, while, in Kazakh resources, the information acquired in a more difficult way. Their texts are more easily written while ours are complicated. The resource for CLIL from Cambridge is written in an easy way and

students themselves can improve their knowledge of English and chemistry (Participant 6, December 13, 2020).

The following findings show the increase in teaching skills due to learning the CLIL approach and using the appropriate resource. Thus, the development of pedagogical skills is one of the breakthroughs of applying CLIL.

Challenges

The next theme that emerged from the responses about applying CLIL in the classroom is challenging. The main four types of challenges were identified: English proficiency, Online – learning, CLIL training, Trilingual education, and lack of teaching material.

Low English proficiency

The majority of participants mentioned challenges in CLIL implementation related to both teacher's and student's low English proficiency. All of the respondents attended a language course that was provided by the school administration and the Ustaz organization. It is been three years since the completion of that language course. Thus, most of the participants forgot vocabulary and speaking skills in English. As a result, teaching in English STEM subjects considered to be challenging due to low English proficiency.

Extract 9

I attended an English course, but had a break in teaching and practicing English. This year I am teaching biology in English again, however, I recognize that I forgot it. At school, I learned the Dutch language, and acquisition of a new language as English is challenging for me due to my old age. Also, my vocabulary is poor. I think that if I will have good English it will make me easy to teach my subject (Participant 1, December 8, 2020)

Extract 10

Our level of English is low and it is difficult to teach in English, thus, I need to improve

my English skills (Participant 2, December 9, 2020) Student's level of English, also

mentioned as a challenge associated with CLIL implementation. The teacher had

difficulties in explaining subjects for students with different levels of English where half of

them did not understand the lecture in English.

Extract 11

The level of students is different in the classroom. For those who do not have good

knowledge of English, it is difficult to understand CLIL lessons. I remember how I was

enthusiastic and explained the topic then showed video but about 50% of the students did

not understand the topic due to the language barrier (Participant 7, December 14, 2020).

Extract 12

There are students with a language barrier who is shy to speak, by the time they would open.

After 5-6 years, I believe we would talk freely with students. We should not stop the

implementation of CLIL. Even as a parent and teacher I support this approach (Participant

4, December 11, 2020).

Online- learning

After analyzing the data, it was found out that the participants struggled with teaching online.

Thus, due to the pandemic situation traditional mode of teaching changed and teachers faced

challenges within the integration of the English language in STEM subjects. Most of the

participants said that they are concerning more about the acquisition of the content when they are

teaching via online steaming. Thus, the finding showed that teachers using mostly the Kazakh language in online teaching and sometimes adding the only terminology in English.

Extract 13

It is difficult to ask students to spend more time online than required. Thus, I am not using English language. As students in online steaming should be 20-30 minutes and teaching in English at that time will consume more time. We cannot require students to be online for so much time (Participant 3, December 10, 2020)

One of the participant mentioned importance of group works in CLIL scenario. However, organizing work in the groups during online learning is challenging for teachers.

Extract 14

But due to online learning students are not working in groups (Participant 6, December 13, 2020).

These results suggest that teachers facing challenges with teaching subjects in English during online teaching. Thus, the pandemic situation changed the traditional way of teaching and created challenges in applying a new approach as a CLIL.

CLIL training

The data revealed that the participants faced different kinds of problems related to CLIL training. Findings show that all of the interview participants attended English courses for teachers conducted by center Ustaz and within this language course teachers had training on CLIL. The CLIL course was 72 hours long training. Most of the participants said that the course overlapped with the work in school and it was challenging to learn effectively.

Extract 15

After completion of the course, our salary increased, however, it was very difficult that course was conducted at the same time as the work in school. Also, I participated in school projects. Thus, my mind was full of information. Thus, I was not able to learn a lot from these courses. I wrote a letter to the web site of the course organizers about conducting a course on free time from work by saving our salary (Participant 3, December 10, 2020).

It seems that the course that contained CLIL training had one more drawback in terms of its effectiveness. Some study participants said that the course was not as effective as they expected.

Extract 16

 I expected from the courses another thing they said you will learn this and this but in practice I did not take a lot from such courses (Participant 2, December 9, 2020)

Extract 17

…because courses for teachers are not effective...(Participant 8, December 18, 2020)

Also, those provided language courses and CLIL training are challenging for older teachers. As the finding shows the teachers in their old age have problems with learning the English language.

Extract 18

It is difficult for old teachers to learn English. I see how in language courses old teachers are struggling, even for me learning language is difficult but a bit easier as I am in my middle age (Participant 1,December 8, 2020).

Overall, these results indicate that CLIL training that was provided for teachers had several drawbacks as overlap with the work, ineffectiveness, and difficulty in learning for older teachers.

Trilingual education

Another reported problem was associated with the rapid implementation of the trilingual education policy. One of the participants said that pace for implementation of such policies should be slower for better learning the approach, despite, the fact that the CLIL approach is very good. Another participant, also, was unsatisfied with the rush in implementing trilingual policy as teaching in English. Because there are students in the school, who did not learn even Russian language.

Extract 19

This approach is very good. However, we need more time for learning this approach. Thus, we need a certain pace for implementation not hurrying to use it; it needs to be set up. I learned CLIL in only one month and from that time; I needed to review and better my knowledge (Participant 5, December 12, 2020)

Extract 20

Implementing such methodologies in rush is a not good idea, because we have students even with low proficiency in Russian and how they will be able to learn English (Participant 2, December 9, 2020)

According to interview respondents, teachers and students facing challenges in applying CLIL due to rapid implementation of the policy that did not have enough time to prepare for it.

Lack of Materials

One more issue regarding challenges in applying CLIL is about resources. Some participants have challenges in finding material for the lesson. Moreover, as it was mentioned in the previous section older teachers have challenges with language acquisition, hence, it will be effective to have prepared lesson plans in both Kazakh and English.

Extract 21

I can say that there is a lack of materials (Participant 2, December 9, 2020)

Extract 22

It is difficult to spend time on creation of lesson plan in English; it will be easier for older

teachers if we have the prepared lesson plans with written goals in both English and

Kazakh (Participant 1, December 8, 2020)

The following two sections were dedicated to breakthroughs and challenges associated with

CLIL implementation in a secondary school in Astana. Together these findings provide

important insights into the first research question. Only one of the participants said that she

needs more time for analyzing the implementation of CLIL.

Extract 23

I need to learn more about CLIL and use it at practice more time to be able to say

challenges and breakthroughs (Participant 5, December 12, 2020).

Four C Framework

This part of this chapter is concerning the second research question. Thus, to analyze how

language is balanced and integrated the 4 C framework used in this part. Therefore, this section

is divided into main 4 sub-sections: content, cognition, communication, and culture.

Content

The participants overall demonstrated their huge concern on content. Most of them

described lessons explaining how content is developed. Also, some participants mentioned that

the content goals are priorities in their lessons.

Extract 24

…with 8 th grade, if we cover oxides, students will learn terminology, classification, and examples in English. I will connect oxides with real-life examples, as if carbon monoxide and I will give information on where we can find it and so on (Participant 4, December 11, 2020).

Extract 25

I understand the approach of CLIL as step-by-step learning, like the spiral, starting from one topic and by the year learning that topic deeper. Thus, when students will be in university they will study without a problem (Participant 7, December 14, 2020).

Extract 26

It is difficult to give a lot of additional information about news in the world as in main subject lessons we need to achieve the content goal of the subject and consider it in English. Students somehow were able to speak in English and learned mostly terminology in English. For example, nature, effects, and physics students learned from the science subject and they learned a little bit of translation. However, teachers need to focus on teaching core subjects content in English not only focusing on terminology. (Participant 5, December 12, 2020).

Cognition

One of the participants starting the lesson by giving easy tasks then concentrating on tasks that are more difficult. Thus, giving at the start easy tasks in English as filling the table motivates students to be involved in the lesson. Moreover, students who do not know chemistry very well are interested in completing easy tasks in English. While other participants use filling gap

activity as an easy task for learning content. Then, the teacher provides difficult tasks, which requires students to do more search. Both of the respondents implicitly mentioning the cognitive part of the CLIL where chemistry teachers.

Extract 27

I am giving activities from easy to more complicated activities. Easy activities are given as a game then, I say a compliment to students who can quickly and easily deal with chemistry tasks in English. Easy tasks as filling tables help students to be proud of themselves, they became motivated to learn. Even students bad in chemistry became involved in the learning process in English by filling the gaps in the table (Participant 4, December 11, 2020).

Extract 28

For example, I am explaining chemistry with very easy English at a beginner level to make it clear for them. The context assignment can include filling the gaps in the text as A level exercise, or when it can be more difficult for students to search more. (Participant 6, December 13, 2020)

Culture

Then, responses to the question about activities used in the classroom included expanding students' knowledge about other countries. Most of the teachers are using information from the internet. One of the respondents giving information out of books, for instance, material about Elon Musk. Thus, teacher familiar with the CLIL approach is searching each lesson for information about other countries and people. The findings demonstrate how teachers like to search for real-life situations for making the lesson interesting.

Extract 29

I started to look for different information on the internet and looking at youtube videos. The information can be out of the book. For example, about Elon Musk. Teachers who know CLIL like to search for something interesting to implement in the lesson. They are looking at the quality of the lesson (Participant 5, December 12, 2020).

Extract 30

These practical works are linked with real-life situations. Students need to speak communicate and read in English. For student's future, hence, they would open for the other information about other country and introduce scientific developments. (Participant 7, December 14, 2020)

Communication

This part of the 4 C framework is considering the role of the language in their lesson. Most of the respondents consider the importance of the English language. One of the respondents said that four language skills as speaking, writing, reading, and listening need to be developed in CLIL.

Extract 31

As in CLIL main 4 skills are developed at the same time as speaking, writing, reading and listening. Thus, if student will be able to explain subject in English it is the way CLIL worked effectively (Participant 7, December 14, 2020).

Moreover, most of the respondents said that the content-based language skills is important.

Extract 32

It is important to work with terminology in English (Participant 1, December 8, 2020)

Extract 33

CLIL is teaching subject content through language in English. I have 14+ CLIL books from Cambridge that I bought for my money and now I am using them. In this book, there is a special focus on language. How to use prefix, the -ied suffixes. For example, for oxide, they are emphasizing on ide suffix. I am sharing the material from this book with students; the activities are short for each topic. Students knowing the English language are interested in such activities during the class. . Students can deal with such tasks even if I can not say the particular English level of that students (Participant 5, December 12, 2020).

In addition, finding shows that students can improve communicative skills in English by pair and group works.

Extract 34

During group works, pair works students' communicative skills in English were improving. At the start of the teaching, I talked with the English teacher about student's level of English. Also, the tasks were prepared considering students' level (Participant 7, December 14, 2020).

Another interviewee indicated the importance of creating own knowledge with the usage of given knowledge.

Extract 35

We need to consider examples from real-life situations us for students to be able to use it. It is like giving name of the ingredients in English then they will be able to create their own dish (Participant 1, December 8, 2020)

Recommendation

Based on teachers' own experiences, they provided some recommendations on how to improve the implementation of the CLIL approach. Some teachers mentioned the importance of dividing students for classes for learning through CLIL. Thus, they think that students with better English proficiency need to acquire STEM subjects in English. The reason for such a claim lies in the difficulty to conduct a lesson with language less proficient students. Also, the interest of the students in learning through the English language was considered higher in such language-oriented classes.

Extract 36

To make it effective, the level of students needs to be considered. For example, we have different directed classes as chem/ bio, physics/ math, for phys/ math students it could be good but their level of English is not very good as their not concerned with learning English. Also, the teacher needs to know 4 skills of language and have a good level of English. (Participant 5, December 12, 2020)

Extract 37

For students learning in English-focused classes acquiring chemistry in English will be interesting, as they will know and understand about content more. I think CLIL will be more effective for those students. These students will learn STEM subjects effectively (Participant 6, December 13, 2020).

Other study participants recommended conducting continuous language and CLIL training for teachers. Moreover, they stated their concern on the lack of communicative skill, hence, they asked for creating training to improve this skill, as they are afraid to be disgraced by students.

One of the participants recommended having an experience exchange with other schools as NIS in the form of courses or training. Moreover, this participant stated that this training should be continued not only one training in a month but also at least 2-hour training in a week.

Extract 38

This is my recommendation for the future in implementing CLIL and teaching in English: Firstly, the students' level in the class is different thus teachers' level of English needs to be high for not to be disgraced by students. Even it is not necessary to have 7 points in IELTS, but teachers need to be able to speak freely with students in English (Participant 4, December 11, 2020).

Extract 39

We need to have exchange with skills from other schools where CLIL already was implemented. We can have effective courses like 2 hours a week dedicated to CLIL and teaching in English. It will be effective (Participant 5, December 12, 2020).

It seems that due to ineffectiveness of course one respondent thinks that only teachers who studied STEM subjects in English recommended to work with CLIL and teach in English.

Extract 40

The teachers who learned biology in English need to teach in schools because courses for teachers are not effective, also, we are going in between lessons at school to that language courses. Thus, we can not teach subjects in English so well as those who have learned it at university(Participant 8, December 18, 2020)

Other recommendations were concerning the additional resources for study as student' book for CLIL lesson and materials for conducting a lesson in English preferably adapted to the Kazakhstani program.

Extract 41

It would be good to have students book for CLIL lessons, experimental practices. Maybe

classrooms for CLIL lessons, more teaching materials, and adapted to Kazakhstan

(Participant 5, December 12, 2020).

To sum up, this chapter considered findings on secondary school teacher's view on applying

CLIL by considering breakthroughs and challenges. Overall, the view on the CLIL approach was

positive, despite some revealed challenges. Also, these findings show how those teachers

applying CLIL by analyzing how language is integrated and balanced in their experience. This

analysis was done within the prism of the 4 C framework with consideration of each pillar:

content, cognition, communication, and culture. It was found that in practice, all of the

participants considered content and some of the participants considered other three pillars. The

final part of the chapter is focused on recommendations for effective implementation of the

CLIL.

Chapter 5: Discussion

This chapter discusses the findings presented in the previous section in order to shed light

on the implementation of CLIL in the Kazakhstani context. The purpose of this chapter is to

provide the answer to the two major research questions about the implementation of CLIL in the

secondary school of Astana. The research questions aimed at exploring the challenges and

breakthroughs of CLIL implementation; and how language is integrated and balanced in the

CLIL scenario by employing 4 Cs (Coyle et al., 2010) as a conceptual framework. In this study,

teachers expressed their concerns regarding the CLIL implementation through qualitative data

collection instruments, specifically, online interviews. In alignment with the research questions,

this chapter discusses the possible explanation of the findings shown in previous sections and its

connection to the related literature.

RQ1. What are the breakthroughs and challenges of the implementation of CLIL in

Kazakhstan?

      With regard to the first research question, the results revealed some breakthroughs

associated with the implementation of the CLIL approach. The findings showed that the main

CLIL breakthroughs are related to motivation, prospects, and teachers' qualifications.

      Most of the participants mentioned an increase in not only students' motivation to learn a

FL but also, in teachers'. This finding coincides with Coyle (2008) who claimed that CLIL can

affect both teachers' and students' motivation to learn a FL. Also, the findings showed that this

increase in motivation is associated with learning both a FL and content. CLIL related literature

(San Isidro & Lasagabaster, 2018; San Isidro, 2019) shows the neutral effect of CLIL on content

learning. However, the result of this current study shows that participants noticed that learning

content in English increases students' interest in the subject content. Thus, motivation is

considered one of the main breakthroughs associated with CLIL implementation at this research

site where the implementation of this approach has been started after piloting schools.

      The second breakthrough associated with implementing CLIL is prospects. The current

study showed that some participants mentioned that teaching STEM subjects in English has a

positive influence on a student's prospects. Therefore, some participants treated the CLIL

approach as an instrument for learning subjects effectively in English. As a result, the teachers

participating in this research believe that implementing CLIL in schools will affect students'

future prospects for being successful in the world arena where the knowledge of science in

English is essential.

Based on findings, the third breakthrough of CLIL was an increase in the teachers'

pedagogical skills. In this light, the participants noticed the positive impact of CLIL in enabling

them to develop and learn new methods of teaching. Moreover, while learning these new

methods of teaching, teachers noticed an improvement in their own level of English.

Despite having a positive attitude toward the usage of the CLIL approach, the

participants honestly shared their challenges during the implementation of CLIL in the

classroom. Five types of challenges of the participants were found: English proficiency, online

learning, CLIL training, trilingual education, and lack of teaching material.

The main challenge revealed in this study is the lack of English language proficiency.

Most of the respondents stated that they have insufficient knowledge of the language for

teaching STEM subjects in English. As mentioned in the literature review chapter, a case study

conducted by Karabassova (2018) showed that teachers have faced challenges related to a

deficiency of language due to the difficulty of transmitting subject material in English.

Moreover, some participants of this and Karabassova's (2018) study questioned the usage of

CLIL in non-language oriented classrooms. The results of this study indicate that it is not only

teachers who have language deficiency issues but also, students. Furthermore, most of the

teachers mentioned that the level of English among students is different in the classrooms. Thus,

some participants of the current study suggest the usage of CLIL in classrooms with an in-depth

study of the English language.

Another important finding was about challenges in online learning during the COVID 19 pandemic. Some participants mentioned a lack of time for integrating language in online sessions; hence, they prefer not to use CLIL in synchronous lessons. Also, the finding revealed that one participant noted difficulties in conducting pair and group work in online sessions. According to Monbec (2020) in his practice in Singapore, online learning was challenging initially for teachers to organize their lessons through an online platform. Also, he faced challenges with students' engagement and his content delivery through scaffolding in CLIL. Thus, the challenges associated with the switch to online learning is revealed in literature and it coincides with these study findings, as some participants mentioned difficulties in online learning. However, this issue related to the online learning challenges is proposed for further investigation in the future.

The findings also revealed that most of the participants were unsatisfied by in-service programs directed towards English language courses and CLIL training for teachers. Such attitudes might well have to do with the fact that teachers had to take part in professional development activities while teaching, which might have developed this dissatisfaction on their part. The findings show that some of the participants were discontented with the outcome of the language course, possibly because their anxiety and language deficiency to communicate with students in English remained. Even though other participants mentioned that they were able to learn something useful and had some communicative skills, they mentioned, that they forgot vocabulary to speak due to a lack of experience. The one unanticipated finding was that a participant of the study attended a pre-service teaching program in university for teaching physics in English.

Furthermore, the findings showed that teachers only attended a 72-hour CLIL training that was part of the language course and showed an overview of the CLIL approach. Subsequently, most of them did not mention explicitly most of the CLIL concepts and

components during the interview. However, the findings show that four respondents mentioned

that they were interested in learning more about CLIL and searched for CLIL approaches online

by themselves but their language deficiency made it difficult to learn CLIL and deliver materials

in English to students. According to Pérez-Cañado (2018), "foreign language proficiency was a

notable lacuna for CLIL teachers that needed to be addressed urgently before providing other

types of training."(p. 215) Thus, in-service teacher programs need to address challenges in

language skills before introducing CLIL to teachers. Interestingly, the findings also tally with

the study conducted by San Isidro (2019) that showed that prior to starting any CLIL program,

teachers need to have teacher training. Thus, the findings show that there is a need to improve in-

service teacher training to develop teachers' communicative skills in English and to prepare

teachers for introducing the CLIL approach.

The high rate and unsystematic implementation of the trilingual education policy are one

of the challenges revealed in the current research. Some participants said that the trilingual

education policy is implemented without the proper preparation of teaching staff and the rate of

implementation is considered high. Along with this trilingual policy, teachers mentioned that

other policies are implemented at this school and this overlap creates difficulties with the

implementation of CLIL.

As a third challenge, the study participants mentioned a lack of teaching materials related

to the CLIL approach. This tallies with Kakenov (2018) study regarding this implementation of

CLIL in the Kazakhstani context, which revealed that teachers are facing problems with

insufficient materials for these lessons. Additionally, the participants in his study mentioned a

lack of time for preparing materials for the lesson. This finding supports the Bovellan's (2014)

idea about the need for high quality resources prepared for learners due to the fact that materials

prepared by teachers themselves do not reach high quality standards all the time. This issue with

teachers' work overload and lack of time for preparing materials was shown in the previous chapter.

RQ2. How do teachers integrate and balance language use in the CLIL scenario?

The second research question was about integration and balancing language use. In this part of the chapter, the 4 C framework will be used to answer the research question. One unanticipated finding was that the data showed each block of the 4 C framework. Even though not all of the blocks were mentioned by participants in their interviews, most of the participants showed their concern about content and cognition. Moreover, only a few of them considered the importance of communication, while the elements of culture were stated by only two teachers.

To discuss the data, it is encouraging to compare findings with the literature about the role of each C in Coyle's (2008) 4 C's framework. Then, the findings will be discussed, based on this framework to analyze the presence of interrelation between components of the framework.

The participants of the study showed a huge concern about the role of content in the lesson and most of them highlighted that they are prioritizing content. The study confirms the idea proposed by San Isidro (2018) that CLIL is concerned more about content acquisition and the language used as a tool for learning. Most of the current study respondents have been using the CLIL approach for two years. These findings further support San Isidro's (2018) statement about inexperienced teachers facing difficulties in curriculum integration, which results in the prioritization of content over language.

Another finding was that some teachers implicitly highlighted the importance of giving students tasks from LOTs to HOTs. This finding matches with the literature on the role of cognition in the CLIL scenario. In this regard, some respondents mentioned the importance of learning and exploring other countries. According to Byram et al. (2001), intercultural awareness

is significant in CLIL. Thus, the present finding seems to be consistent with literature about the role of culture in CLIL.

In terms of the role of the language in teaching STEM subjects, the interviews showed that two elements of the language trypth were present in this study: the language of learning, language for learning, and language through learning. Most of the respondents mentioned that they are working with subject-related terminology during the lesson, which is BICS. Also, one respondent stated that English subject-related vocabulary suffixes and prefixes are learned by students. As mentioned in the literature review part, the language of learning focuses on specific content-related language, expressions, vocabulary, and grammar, which coincides with the study findings. When reviewing the literature, it was found that language for learning was also mentioned by some respondents as they highlighted the performance of pair and group work during the lesson. Thus, some teachers in this study used not only subject-related language but also mentioned the importance of using the language for interaction. Based on the findings, one respondent noticed the importance of giving students some basic knowledge in English through which they will be able to create their knowledge in the future. This finding shows a similarity with the third element of the language trypth, which is language through learning. Also, the findings show that one respondent considers the importance of developing the four language skills during lessons. Overall, the results of this study show that some respondents understand the importance of language roles in the CLIL scenario, which coincides with the literature review.

Thus, the findings show that some participants mentioned several activities, tasks, methods, and materials for conducting their lessons with consideration of Coyle et al.'s (2010) principles explaining this framework. As was mentioned in the findings, the participants considered the creation of their knowledge and connected content with the development of cognitive goals. One of addition, regarding language goals,   it is important to note that

participants shared their experiences on how they are integrating language with their subjects.

Based on this study, the literature suggesting seven principles for explaining the 4 C framework

was to some extent consistent with the findings. However, it is seen that in-service training needs

to take into account detailed explanations of the 4 C framework for effective implementation of

CLIL.

Chapter 6. Conclusion

The last chapter of the current study summarizes the key findings, provides

recommendations for the improvement of the CLIL implementation, mentions the limitations of

the study, and presents possible implications for further research. The goal of this study was to

explore what breakthroughs and challenges teachers are facing in the implementation of CLIL approach and how they are balancing content and language in mainstream school in Astana.

Firstly, the current study revealed that most of the teachers have a positive view on CLIL implementation. According to Mehisto and Asser (2007), their qualitative study showed high levels of satisfaction and engagement related to CLIL implementation in Estonia. Thus, the current research coincides with the literature. It is interesting to note that this positive attitude toward the CLIL approach was associated with several breakthroughs as increase in motivation, prospects, and teachers' qualifications. Along with the mentioned breakthroughs, the teachers mentioned the challenges associated with applying CLIL in mainstream school. The study not allowed only the researchers to identify some major challenges including insufficient English language proficiency of both teachers and students, but also difficulties related to online-learning, ineffective pre-service CLIL training, and unsystematic implementation.

Secondly, the findings revealed that respondents have some implicit understanding on how to integrate and balance language in the CLIL scenario. The interview questions were semi-structured and the main concepts of the CLIL and other terms associated with this approach were not mentioned during the interview. Because the goal of the current research was to understand the level of knowledge about this approach and how they are implementing it, hence, semi-structured interviews considered more implicit questions about CLIL. Then, the obtained interview transcripts were analyzed by in vivo coding in order to produce findings. These findings in the next step were discussed by a 4 C framework proposed by Coyle et al. (2008). The result of the analysis showed that few respondents considered the implicit correlation between content, cognition, communication and culture. However, most of the respondents mentioned that they were focusing only on content goals during the lesson due to discussed challenges associated with CLIL. By discussing findings, it was concluded that all respondents pointed out that they need to improve their language skills for effective implementation of CLIL.

At the same time respondents shared their recommendations related to the effective

implementation.

Thus, based on the teaching experiences, the participants provided several

recommendations on how to fix the challenges mentioned and how to integrate language in the

CLIL scenario. The recommendations include the implementation of CLIL only in special

classes with in-depth English language and conducting continuous language and CLIL approach

learning courses.

Recommendations

The results of the current research have several important implications for policymakers,

in-service teacher programme administrators and teachers in Kazakhstan. It is important to

mention that the CLIL implementation in one secondary school in Astana showed teachers

experience and view on applying this approach. The current study produced results in terms of

breakthroughs and challenges associated with implementation of CLIL. Also, it showed findings

related to balancing and integrating language in CLIL which is a significant feature of effective

CLIL implementation. Therefore, this study results might contribute to the successful

implementation for the Trilingual education policy as it provides some essential insights to

educational stakeholders as policymakers, in - service program organizations and CLIL teachers.

Firstly, for dealing with the challenge associated with low English proficiency of

teachers, prior to CLIL training, programs for improving language skills can be conducted out of

work time and for longer duration. Also, students can start to improve language skills from

primary school for making sure that they will be able to deal with the STEM subjects in English.

Secondly, the quality of in- service as well as pre-service programs need to be improved.

Thus, the teaching staff in this program should have high language skills and proper

understanding of CLIL approach.

Finally, the teaching materials should be prepared for teachers. These teaching resources need to consider the role of language and interrelation of four blocks of the Coyle (2008) 4C framework. In addition, these materials should be accessible for all teachers.

Limitations of the study

The current study has several limitations in terms of finding generalization, time spent on the site, and exploring only teachers' view on CLIL implementation. Firstly, the findings cannot be widely generalized because it is a small-scale case study focusing on the interviews with only 8 respondents in one medium school. Secondly, because of time pressure I conducted only interviews with participants, while conducting class observation will give results that are more accurate. Thirdly, again because of time, I had to conduct interviews only with teachers; however, exploring the view of students will give a deeper understanding about CLIL implementation in secondary school.

Implications for further research

The implementation of Trilingual education is started in mainstream schools and the topic of the current research is considered to be relevant for further research. The studies with more participants and research sites will give more detailed information about CLIL implementation. Moreover, the large- scale study with other types of research methods such as observation and evaluation of handed in tasks will show how effectively teachers can apply this approach. For example, Nikula (2015) conducted a study on hands-on tasks in CLIL science classrooms; hence, this method will give more detailed information about the role of language in CLIL scenarios.

Secondly, the view on CLIL implementation was considered from the perspective of only teachers, hence, other educational stakeholders' views can be investigated. Some teachers during the interview mentioned that students' view on implementation of CLIL, also, needs to be

considered because they can provide reflection and their feedback related to their achievements and view on implementation. Thus, both teachers and students' views will show more detailed results of the study.

Thirdly, online - learning through CLIL needs further investigations. Because of the COVID-19 pandemic, the schools went to an online- learning format. Thus, the teacher's challenges particularly with implementing CLIL in online-teaching can be investigated more.

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INFORMED CONSENT FORM

Title of the study: Analysis of CLIL Practices in a Secondary School in Astana

DESCRIPTION: You are invited to participate in a research study on exploring what breakthroughs and challenges teachers are facing in the implementation of Content Language Integrated Learning(CLIL) approach and how they are balancing content and language in mainstream school in Astana.
 You will be asked to have appointment via Zoom anytime convenient for you. You will be asked for permission to record your interview. Furthermore, the audio recorders will be saved on the disk that will be password-protected.

TIME INVOLVEMENT: Your participation will take approximately from to 30 to 40 minutes.

RISKS AND BENEFITS: The risks associated with this study are considered to be minimal, because the personal identity of participants will be kept confidential as per the procedures described in the previous section.
Although there are no direct benefits associated with this study, it may be beneficial for the participants themselves as participating as interviewees gives them as opportunity to reflect on their weaknesses and predict and overcome possible challenges. Moreover, the participants' contribution will be highly appreciated as it will help to reveal valuable insights and feedback. Your decision whether or not to participate in this study will not affect your: employment.

PARTICIPANT'S RIGHTS: If you have read this form and have decided to participate in this project, please understand your participation is voluntary and you have the right to withdraw your consent or discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled. The alternative is not to participate. You have the right to refuse to answer particular questions. The results of this research study may be presented at scientific or professional meetings or published in scientific journals.

CONTACT INFORMATION:

Questions: If you have any questions, concerns or complaints about this research, its procedures, risks and benefits, contact the Master's Thesis Supervisor for this student work, Xabier San Isidro, e-mail: xabier.sanisidro@nu.edu.kz

Independent Contact: If you are not satisfied with how this study is being conducted, or if you have any concerns, complaints, or general questions about the research or your rights as a participant, please contact the NUGSE Research Committee at gse_researchcomittee@nu.edu.kz

Please sign this consent from if you agree to participate in this study.

- • I have carefully read the information provided;
- • I have been given full information regarding the purpose and procedures of the study;

- I understand how the data collected will be used, and that any confidential information will be seen only by the researchers and will not be revealed to anyone else;
- I understand that I am free to withdraw from the study at any time without giving a reason;
- With full knowledge of all foregoing, I agree, of my own free will, to participate in this study.

Signature: _____   Date: _____

The extra copy of this signed and dated consent form is for you to keep.

ФОРМА ИНФОРМАЦИОННОГО СОГЛАСИЯ

Тема исследования: Анализ практики CLIL в средней школе Астаны

ОПИСАНИЕ: Вы приглашены принять участие в исследовании по изучению достижений и проблем, с которыми сталкиваются учителя при внедрении CLIL, и о том, как они обеспечивают баланс между содержанием и языком в основной школе в Астане.
 Вам будет предложено принять участие в интервью через Zoom в любое удобное для вас время. Вам будет предложено разрешить запись вашего интервью. Кроме того, аудио рекордеры будут сохранены на диске, который будет защищен паролем.

ВРЕМЯ УЧАСТИЯ: Ваше участие потребует около от 30 до 40 минут.

РИСКИ И ПРЕИМУЩЕСТВА:

Риски, связанные с исследованием, считаются минимальными, поскольку личные данные участников будут сохранены в тайне в соответствии с процедурами, описанными в предыдущем разделе. Хотя это исследование не дает прямых преимуществ, оно может быть полезным для самих участников, поскольку участие в опросе дает им возможность поразмышлять о своих трудностях, а также спрогнозировать и преодолеть возможные проблемы. Более того, вклад участников будет высоко оценен, так как он поможет выявить ценные идеи и отзывы.
Ваше решение о согласии либо отказе в участии никаким образом не повлияет на: Вашу работу.

ПРАВА УЧАСТНИКОВ: Если Вы прочитали данную форму и решили принять участие в данном исследовании, Вы должны понимать, что Ваше участие является добровольным и что у Вас есть право отозвать свое согласие или прекратить участие в любое время без штрафных санкций и без потери социального пакета, который Вам предоставляли. В качестве альтернативы можно не участвовать в исследовании. Также Вы имеете право не отвечать на какие-либо вопросы. Результаты данного исследования могут быть представлены или опубликованы в научных или профессиональных целях.

КОНТАКТНАЯ ИНФОРМАЦИЯ:

Вопросы: Если у Вас есть вопросы, замечания или жалобы по поводу данного исследования, процедуры его проведения, рисков и преимуществ, Вы можете связаться с руководителем магистерского тезиса исследователя Шабьер Сан Исидро, e-mail: xabier.sanisidro@nu.edu.kz

Независимые контакты: Если Вы не удовлетворены проведением данного исследования, если у Вас возникли какие-либо проблемы, жалобы или вопросы, Вы можете связаться с Комитетом Исследований Высшей Школы Образования Назарбаев Университета, отправив письмо на электронный адрес gse_researchcomittee@nu.edu.kz

Пожалуйста, подпишите данную форму, если Вы согласны участвовать в исследовании.

- Я внимательно изучил представленную информацию;
- Мне предоставили полную информацию о целях и процедуре исследования;
- Я понимаю, как будут использованы собранные данные, и что доступ к любой конфиденциальной информации будет иметь только исследователь;
- Я понимаю, что вправе в любой момент отказаться от участия в данном исследовании без объяснения причин;
- С полным осознанием всего вышеизложенного я согласен принять участие в исследовании по собственной воле.

Подпись: _____   Дата: _____

Вам необходимо сохранить дополнительную копию этой подписанной и датированной формы согласия.

ЗЕРТТЕУ ЖҰМЫСЫ КЕЛІСІМІНІҢ АҚПАРАТТЫҚ ФОРМАСЫ

Зерттеу жұмысының тақырыбы: Астана қаласының орта мектебіндегі CLIL тәжірибесін талдау

СИПАТТАМА: Сіз CLIL тәсілін енгізу барысында мұғалімдер қандай жетістіктер мен қиындықтарға тап болатынын және олардың сабақтың мазмұны мен тілді қалай балансты ұстайтынын зерттеуге бағытталған зерттеу жұмысына қатысуға шақырылып отырсыз. Сізге ыңғайлы уақытта Zoom арқылы кездесуге қатысуды ұсынылады. Сізден сұхбатты жазып алуға рұқсат сұралады. Сонымен қатар, интервьюға қатысты аудиожазбалар парольмен қорғалатын дискіде сақталады.

ӨТКІЗІЛЕТІН УАҚЫТЫ: Сіздің қатысуыңыз шамамен 30-40 минут уақытыңызды алады.

ЗЕРТТЕУ ЖҰМЫСЫНА ҚАТЫСУДЫҢ ҚАУІПТЕРІ МЕН АРТЫҚШЫЛЫҚТАРЫ:

Зерттеу жұмысына қатысудың қауіптері минималды болып саналады, өйткені қатысушылардың жеке басына қатысты ақпарат алдыңғы бөлімде сипатталған рәсімдерге сәйкес құпия сақталады. Бұл зерттеумен байланысты ешқандай тікелей артықшылықтар болмаса да, қатысушылардың өздері үшін пайдалы болуы мүмкін, өйткені сұхбаттасушы ретінде қатысу өзіңнің әлсіз жақтарың туралы ойлауға және мүмкін болатын қиындықтарды болжауға және оларды жеңуге мүмкіндік береді. Сонымен қатар, қатысушылардың үлесі жоғары бағаланады, өйткені бұл құнды түсініктер мен кері байланыстарды ашуға көмектеседі.

Зерттеу жұмысына қатысуға келісім беруіңіз немесе бас тартуыңыз *Сіздің жұмысыңызға* еш әсерін тигізбейді.

ҚАТЫСУШЫ ҚҰҚЫҚТАРЫ: Егер Сіз берілген формамен танысып, зерттеу жұмысына қатысуға шешім қабылдасаңыз, Сіздің қатысуыңыз ерікті түрде екенін хабарлаймыз. Сонымен қатар, қалаған уақытта айыппұл төлемей және сіздің әлеуметтік жеңілдіктеріңізге еш кесірін тигізбей зерттеу жұмысына қатысу туралы келісіміңізді кері қайтаруға немесе тоқтатуға құқығыңыз бар. Зерттеу жұмысына мүлдем қатыспауыңызға да толық құқығыңыз бар. Сондай-ақ, қандай да бір сұрақтарға жауап бермеуіңізге де әбден болады. Бұл зерттеу жұмысының нәтижелері академиялық немесе кәсіби мақсаттарда баспаға ұсынылуы немесе шығарылуы мүмкін.

БАЙЛАНЫС АҚПАРАТЫ:

Сұрақтарыңыз: Егер жүргізіліп отырған зерттеу жұмысының процесі,қаупі мен артықшылықтары туралы сұрағыңыз немесе шағымыңыз болса, келесі байланыс құралдары арқылы зерттеушінің магистрлық тезисі бойынша жетекшісімен хабарласуыңызға болады. Шабьер Сан Исидро, e-mail: xabier.sanisidro@nu.edu.kz

ДЕРБЕС БАЙЛАНЫС АҚПАРАТТАРЫ: Егер берілген зерттеу жұмысының жүргізілуімен қанағаттанбасаңыз немесе сұрақтарыңыз бен шағымдарыңыз болса, Назарбаев Университеті Жоғары Білім беру мектебінің Зерттеу Комитетімен көрсетілген байланыс құралдары арқылы хабарласуыңызға болады: электрондық поштамен gse_researchcommittee@nu.edu.kz.

Зерттеу жұмысына қатысуға келісіміңізді берсеңіз, берілген формаға қол қоюыңызды сұраймыз.

- Мен берілген формамен мұқият таныстым;
- Маған зерттеу жұмысының мақсаты мен оның процедурасы жайында толық ақпарат берілді;
- Жинақталған ақпарат пен құпия мәліметтерге тек зерттеушінің өзіне қолжетімді және мәлім болатынын толық түсінемін;
- Мен кез келген уақытта ешқандай түсініктемесіз зерттеу жұмысына қатысудан бас тартуыма болатынын түсінемін;
- Мен жоғарыда аталып өткен ақпаратты саналы түрде қабылдап, осы зерттеу жұмысына қатысуға өз келісімімді беремін.

Қолы: _____   Күні: _____

Осы қол қойылған және бекітілген келісім формасының қосымша көшірмесі

сізде сақталады.

Appendix B: Interview protocol

Project: Analysis of CLIL practices in a secondary school of Astana

Date:

Time of interview:

Length of interview: 30-45 minutes

Place:

Interviewee:

Position of interviewee: STEM teachers

Interviewer: Nazira Shabdenova

My name is Nazira Shabdenova and I am a second-year MA student at Nazarbayev

University. Thank you for giving your agreement to take part in this interview. The topic of my

current study is "Analysis of CLIL practices in a secondary school of Astana". I would like you

to share your opinion about breakthroughs and challenges associated with the implementing

CLIL approach. Moreover, I would like to hear how you are balancing and integrating the

language in the CLIL scenario.

Some important informations regarding interview:

• The interview is on a voluntary basis and you can withdraw from it any time or

skip the question.

• The confidentiality will be provided

• You can choose between Kazakh, Russian and English languages to conduct the

interview

• The interview will be audiotaped with your permission

If you agree to participate in the study, please read the follwoing consent form and sign it.

Interview questions:

1.   How long have you worked in this school?

2.   Do you like your job?

3.   Have you taken part in CLIL training events?

    (If yes, how many events? How long ago?)

4.   Could you describe what CLIL is?

5.   How has your approach of teaching changed after you were introduced to CLIL?

6.   What is the effective CLIL implementation, in your opinion?

7.   Describe what methods and activities are you using in your CLIL teaching practice?

8.   What is the role of language in your CLIL lessons?

9.   How can you integrate and balance language in CLIL lessons?

10.   Could you see any changes in students' learning outcomes due to CLIL implementation?

   (If yes, which ones?)

11.   Which do you think are the benefits and drawbacks of CLIL implementation?

12.   Do you think CLIL implementation should go on in your school? Why?

13.   Could you give any recommendations for the improvement of CLIL implementation?