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CLIL Integration Issues and Distance Learning Technologies

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Abstract. This article proposes an expert vision of the problems of applying CLIL training in the context of distance education in schools and universities of the Republic of Kazakhstan. The relevance of the study is due to the lack of scientific research devoted to the subject analysis of the integration of CLIL learning and distance learning technologies and related problems.

Diagnostics of the existing problems was carried out through an online survey of school teachers and university professors who have experience in using CLIL technology in distance learning.

For example, the results of the survey have made it possible to identify an expert opinion on the compatibility of the two teaching technologies, to formulate the main problems and differentiate them in terms of school and university practice. Moreover, the analysis has established relationship problems identified with the history of the modernization of secondary and higher education, and pandemic circumstances of 2020. This also explains different level of CLIL preparedness of school teachers and university professors for the independent development of electronic content, the search for a finished educational product, and the use of educational platforms. In this context, the need for CLIL modern teachers' training programs and effective mechanisms for their academic support is indicated.

Based on the survey results, it was concluded that CLIL distance learning is viable in school and university practice. The integration of the two technologies creates an effective tool to promote the empowerment of CLIL, the development of a virtual learning environment, and emergence of a distance format of students' academic mobility.

These results can be significant as a basis for making tactical decisions on the development of the resource and methodological base of CLIL distance learning in the system of secondary and higher education.

Keywords: CLIL technology, distance technology, sociological survey, school, university, competencies, resources.

Research area: pedagogy.

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Проблемы интеграции CLIL и дистанционных технологий обучения

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Аннотация. В данной статье предложено экспертное видение применения CLIL-обучения в условиях дистанционного образования в школах и вузах Республики Казахстан.

Актуальность исследования обусловлена отсутствием научных изысканий, посвященных предметному анализу интеграции CLIL-обучения и дистанционных технологий и связанных с ней проблем.

Диагностика существующих проблем осуществлялась путем онлайн-опроса учителей школ и преподавателей вузов, которые имеют опыт применения технологии CLIL в дистанционном формате.

Результаты позволили узнать экспертное мнение о совместимости двух технологий обучения, сформулировать основные проблемы и дифференцировать их в аспекте школьной и вузовской практик. В ходе анализа была установлена связь выявленных проблем с историей модернизации среднего и высшего образования, пандемийными обстоятельствами 2020 года. Этим же объясняется разный уровень подготовленности CLIL-педагогов школы и вуза к самостоятельной разработке электронного контента, поиску готового учебного продукта, использованию образовательных платформ. В контексте этого обозначена потребность в современных программах повышения квалификации CLIL-педагогов и эффективных механизмах их академической поддержки.

На основании опроса был также сделан вывод о жизнеспособности дистанционного CLIL-обучения в школьной и вузовской практике. Интеграция двух технологий порождает эффективный инструмент, способствующий расширению возможностей CLIL, развитию виртуальной образовательной среды, появлению дистанционного формата академической мобильности обучающихся.

Данные исследования могут быть использованы как основание для принятия тактических решений о развитии ресурсной и методической базы дистанционного CLIL-обучения в системе среднего и высшего образования.

Ключевые слова: технология CLIL, дистанционная технология, социологический опрос, школа, вуз, компетенции, ресурсы.

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Introduction

The practice of CLIL training in Kazakhstan has been developed in the context of the next stage of domestic educational modernization. Today this technology is successfully applied in universities and schools of Kazakhstan. According to the National Report on the State and Development of the Education System of the Republic of Kazakhstan (based on the results of 2019), teaching of natural sciences subjects is carried out in 3252 schools, in which 7728 CLIL teachers work and 213 319 schoolchildren study. The strategic plans for the development of most universities in the Republic include measures for the introduction of English-language modules of core disciplines, the development of the internationalization of educational programs and the university environment. Due to academic freedom provided to universities by CLIL, training is gaining momentum and shaping priorities in personnel and educational policy. For example, conditions and incentive mechanisms are being created to improve the language training of teachers, educational and scientific literature in English is purchased, and trilingual training programs are being launched. A new stage in CLIL education development was provoked by the state task of training teachers for teaching such school subjects as Physics, Biology, Chemistry, Informatics in English. In this context, universities began to build up their academic potential, attracting the existing resources of the global arsenal of CLIL training.

The results and prospects of CLIL education become the subject of scientific discussion and theoretical comprehension. Research interest is usually associated with the assessment of domestic experience in the context of the international achievements of CLIL education. Thus, over the past decades, the scientific community has developed the theoretical and methodological foundations of foreign language education, studied the issues of psycho- and sociolinguistic aspects and the functional significance of bilingualism, the interaction of perceptual, cognitive and affective processes of bilingualism, intralingual and interlingual transfers (Karlinskiy, 2011; Zalevskaya, 2013); the principles of integrated teaching of the

subject and language, aspects of foreign language competence in bilingual education are determined (Bentley, 2010; Coyle D., 2010). The main background of the existing research is related to the study of CLIL technology in a traditional teaching format, which provides for contact communication between the teacher and the student.

At the same time, the educational situation in Kazakhstan is characterized by alternative learning conditions, according to the current law, which allows the use of distance technologies. For 12 years, domestic universities have been trying to master these technologies and to introduce the advanced experience of foreign countries. Gradually, distance learning acquired an independent status and replaced the usual format of distance education. Since 2019, distance technologies have been integrated into full-time education programs that provide for distance learning. This decision required from faculty to practice new approaches to developing methodological resources based on IT skills and a new, partially mastered digital culture. The academic community is faced with the need for a theoretical understanding of the issue of distance education, the study of world experience, and its extrapolation into the national education system. In this regard, the first attempts to generalize this experience appeared in the form of scientific research, reports, and articles (Baezova, 2020). Government tasks related to the development of a digital society and virtual environment in education have become a serious impetus to the development of distance technologies. As in the case of CLIL, universities started investing in the development of digital ecosystems, methodological resources, and teachers' training in IT technologies.

Theoretical framework

As it developed, the Kazakh education system adequately responded to the new challenges of our time. In an effort to master new trends, the Ministry of Education and Science of our country set new tasks for the educational community, including them in strategic documents in the field of education, science and society. As a result, in different years, state programs Education Development in Kazakhstan

contained the task of implementing distance learning technologies, development of multilingual education, teacher training for English language teaching in schools, and strengthening IT skills and digital culture of future specialists. To date, the educational community of Kazakhstan is guided in its innovation policy by two basic documents: the state program for the development of education and science of the Republic of Kazakhstan until 2025, and the State Program «Digital Kazakhstan».

Statement of the problem

The experience of distance education and CLIL learning gained by Kazakhstani universities has acquired a new meaning in the context of the growing pandemic of 2019 and 2020. The domestic education system has received a new challenge to preserve the learning process of school and university students in distance. In this regard, it became necessary to combine the two teaching technologies, which found themselves in a new natural environment of development. The situation has developed when distance technology has become the basic tool for the implementation of CLIL training in its content-formal manifestation. Currently, CLIL teachers have to reformat not only academic content, but correct the methodological approaches in teaching as well. On the one hand, there appeared opportunities to apply their experience in a new reality, on the other hand, to solve pending problems, including the methodological provision of CLIL training programs. At the same time, it is important to note that the current manifestation of these problems in higher and secondary education systems differs markedly.

The combination of the two technologies in the educational process creates new aspects of learning for modern pedagogical science. Our historiographic review illustrated the absence of special works devoted to the study of the experience of combining distance technologies and CLIL, and made it possible to single out only one CLIL Internet resource – Open Online Learning (Ulster University website). It is a three-year joint project between the University of Ulster and CLIL Open Online Learning, funded by the European Union.

The purpose of this article is to assess the perception of CLIL teachers towards the process of integrating two learning technologies, to identify potential problems in the implementation of distance CLIL learning in university and school practice.

Methods

As an initial aspect of the stated problem studying, researchers highlight the obtaining of an expert assessment of the application of CLIL technology in school and university practice in the context of distance learning. In fact, this is a subjective diagnosis of the problem and an expert assessment of the resource conditions for the application of CLIL technology in universities, the features of CLIL training, its effectiveness and development opportunities in the context of distance education (Zhetpisbayeva, 2020:131).

To obtain an expert assessment of the application of CLIL technology in school and university practice in the context of distance learning, a qualitative methodological approach with a sociological survey of school and university professors who practice CLIL technology in Kazakhstan was applied. The main part of the respondents included school teachers of chemistry, computer science, biology, English, natural sciences, mathematics, information and communication technologies, electrical machines, etc., who participate in the natural sciences teaching staff training, and who have developed educational non-language courses in English, including the compulsory discipline Information and Communication Technologies.

Interaction with the respondents was carried out through a Google survey. The questionnaire «Application of CLIL Technology in Distance Education» developed by the researchers included a block of open and closed questions related to a certain aspect of the stated topic and requiring the respondents to clarify their own position, choose a close judgment, rank these parameters, assess statements, and their own answer.

When compiling the questionnaire questions, researchers relied on scientific publications of domestic and foreign researchers in the

field of CLIL learning and distance education technologies. The preference was given to works devoted to the implementation of these technologies in the modernized education systems of the post-Soviet space. Theoretical works of B. A. Zhetpisbayeva, E. A. Kostina, V. I. Levin, G. M. Mutanov, A. K. Kusainov, I. Nagayeva, V. P. Tikhomirov; scientific research by E. E. Zharova, S. N. Popova, G. K. Savchenko about teaching methods; works of T. Zyuzina, V. P. Safronova, U. E. Tikhomirova on the creation of educational resources and virtual learning environment in schools are among them. Along with this, the experience of the sociology of education on the development of tools for such surveys was taken into account (Zhetpisbayeva, 2021).

The study of the research results of the above authors made it possible to determine the nature of the introduction of teaching technologies, the conditions for the formation of the educational environment, the use of special methods and the development of educational content. At the same time, no scientific works devoted to the subject analysis of the integration of CLIL learning and distance technologies were found. This, on the one hand, limits the prerequisite content of the questionnaire but, on the other hand, it determines the relevance of the survey being conducted.

When processing the survey results, statistical and descriptive methods were used. The closed-ended questions of the questionnaire received statistical significance and were formed according to the majority principle. The open-ended questions were classified based on the content of the assessments made.

Due to the prevailing sociological practice the survey creation was of a phased nature. The first stage is a written appeal to the regional education departments and universities of Karaganda and Pavlodar regions with a request to assist with the survey; the second is sending a link to the Google profile <http://anketa.ineu.edu.kz/>; the third stage is processing of the survey results; the fourth one is analysis of the statistical results and trends in the context of the stated goal and the survey topic. As a result, 235 respondents, representing 12 lyceums and 4

universities of Pavlodar, Karaganda, and Nur-Sultan, took part in the sociological survey.

Discussion

The survey has illustrated that most respondents recognize the strategic importance of CLIL for the development of national education. Perhaps this is due to the peculiarity of the respondents who are interested in promoting this idea and evaluate it quite professionally. At the same time, there is a difference in the emphasis: 70 % of school teachers, in contrast to university professors consider this technology to be elitist. Therefore, it should be applied in specialized classes aimed at the science and technology departments of universities.

Judging by the answers received, 82 % of the respondents believe that CLIL technology in Kazakhstan has good prospects for its consumer both in school and university environments. As a possible development perspective, the respondents admitted the combination of CLIL with distance technologies.

Sharing the idea of the priority of subject knowledge, the respondents ranked the special tasks of the CLIL teacher in different ways. Most teachers consider it important to teach English terminology, which will allow to read scientific literature in the future. University professors note the importance of teaching a professional language, which contributes students to be able to achieve academic goals. As a result, there is continuity in the views of CLIL school teachers and university professors about the prerequisite of subject knowledge, conceptual apparatus, special vocabulary and post-requisite mastering of scientific literature in English.

The opinions of the respondents about the tasks of the CLIL teacher, due to the transition to a distance learning format, in a generalized form can be systematized in three main areas. These are tasks such as creating an electronic methodological product, searching for electronic educational content, and studying the proposals of the virtual academic environment, including educational platforms.

The transition to distance technologies required from CLIL teachers to strengthen their own IT skills and master the virtual academic

environment, which today offers a variety of educational content. Unlike university professors, school teachers have experienced serious difficulties in developing e-learning products. According to them, in modern school practice there are no technical support mechanisms for teachers who want to develop electronic study guides, problem books, dictionaries, etc. University professors had to master the resources of educational platforms, develop online courses themselves and record video lectures.

According to school teachers, the main electronic content they use and offer to students is of someone else's development (over 70 %). In the practice of university professors, this figure is much lower; it does not exceed 50 %. This is due to the difference between the academic policies of schools and universities in the Republic of Kazakhstan. Distance learning in universities has a fairly long experience, which is based on the teachers'skills to develop an author's electronic product.

This also explains the low provision of natural science disciplines at schools with accessible electronic and digital sources, which are adaptable to the curriculum. According to teachers, the accessibility of available sources in the subject is not more than 20 %. In university practice, this indicator is much higher; it reaches more than 60 %. Nevertheless, this is due to the fact that universities have a subscription to world electronic libraries, the development of MOOC, the practice of developing electronic lectures, textbooks, etc. There are no available paid content, virtual laboratories, etc. for the majority of teachers.

Furthermore, the replies of CLIL school teachers and university professors coincided that the format of remote communication itself caused complexity, even when using ZOOM, it was necessary to concentrate on material and strengthen the active role of the teacher. Most respondents today solve the problem of preserving natural communication in virtual mode while maintaining the active students'role during the lesson. Many of them had to introduce a system of webinars and tasks designed in the form of voice messages for listening. Another challenge is related to the preservation of speaking practice in the learning process. It is

important to maintain the traditional balance of written and oral forms of strengthening or testing of knowledge. In the distance format, the dominance of written forms of communication and information exchange was observed. In the context of distance learning, the predisposition of natural science disciplines to written types of work has increased. At the same time, due to this, students had to work more independently with English-language sources.

CLIL distance learning is quite possible under condition of the presence of educational platforms and resource sites with educational content, as well as technical support for electronic product development: the teacher prepares content and software specialist draws it.

These difficulties determine the opinion that today CLIL training in the traditional format is more effective, while the distance format is the most promising in the emerging digital society.

When defining the basic CLIL competencies of a teacher, all respondents indicated methodological skills that allow students to form subject knowledge and communication skills in the language, as well as IT competencies that allow using or creating electronic resources and navigating the educational Internet space. Based on the responses, the need for IT competencies intensified in the pandemic, when it was necessary to develop a ZOOM or Moodle system.

The comparative analysis of the IT competencies self-assessment indicators illustrated that university professors, in contrast to school teachers, feel more confident when using virtual communication systems and demonstrate a developed methodological arsenal developed specifically for distance learning. Electronic textbooks, digitized books, virtual laboratories are among them. Judging by the answers, university professors have better search skills and have a fairly complete understanding of resource sources. The reasons for this are largely associated with the developed practice of using intra-university systems for automating testing processes, registering grades, working in personal accounts, setting assignments, etc. School practice in this sense lags significantly behind university practice, which has more ac-

ademic freedom and human resources for the development and implementation of automated control systems.

The survey showed that more than 80 % of school teachers and 42 % of university professors experienced difficulties in reformatting teaching material. According to them, it was required to significantly expand the basic content intended for independent study, to detail methodological recommendations for assignments, and to introduce new forms of their implementation up to video recordings. An active role in this process belongs to students who have a good command of interactive means of communication. In this context, many university professors (63 %) plan to master online learning methods and create special video content, including those, recorded in video studios at their universities. School teachers claim that they do not have access to a resource base that allows them to do this in a professional environment, therefore they mainly use improvised means: mobile phones, home video cameras, recording devices of the ZOOM system. Their answers indicate that CLIL teachers have sufficient knowledge to create adequate content, but do not always have access to the resource base and methodological assistance necessary for technical support of the distance learning process. For example, a CLIL teacher can develop a lesson text, but is not able to design an educational video based on it.

In this regard, the problem of professional development arises. Many school teachers were unable to answer the question of where they could get additional competencies in educational resources development and receive training in online learning. Answering this question, university professors (71 %), indicated educational platforms (University, Open.Ru, Coursera, etc.) and noted that the solution to this problem is institutional in nature, i. e. universities independently develop such programs or resort to organized consulting.

School teachers believe that universities should more actively help them in developing a resource base and transferring experience in mastering special techniques that work in the

context of distance education. Most of the respondents indicated the need for additional support for CLIL distance learning:

- 86 % of school teachers and 62 % of university professors need methodological development in this area;

- 91 % of school teachers and 96 % of university professors need special educational platforms that provide technical conditions for interacting with students at the stages of studying a topic, completing assignments, testing knowledge, proctoring, and exchanging information;

- 96 % of school teachers and 71 % of university professors need educational content, including video and audio materials, presentations, professionally oriented dictionaries, etc.;

- 90 % of school teachers and 70 % of university professors need training courses in methodology and content development for teaching in a distance format.

As can be demonstrated from the answers, the need of school teachers for organizational and methodological support is significantly higher than that of university professors (Fig. 1).

The overwhelming majority of the respondents do not doubt in the effectiveness of CLIL teaching in the traditional format: 88 % of school teachers and 83 % of university professors rated it at the maximum score on the proposed rating scale. However, when assessing the effectiveness of CLIL distance learning, opinions were somewhat divided. Greater skepticism is demonstrated by school teachers, 42 % of whom believe that distance learning reduces the quality of training. Judging from the responses, this opinion is due to the age characteristics of school students who, in contrast to university students, need closer contact and the teacher's attention to learn a subject in a foreign language (English). The assessments of university professors can be called cautious, but optimistic. The majority rate the effectiveness of distance learning CLIL as satisfactory (Fig. 2). Perhaps the pandemic circumstances, in which the integration of the two learning technologies took place, contributed to the increased skepticism.

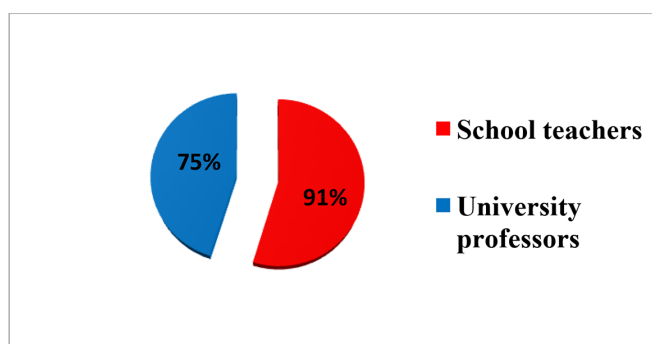


Fig. 1. The need of distance CLIL teachers for academic support

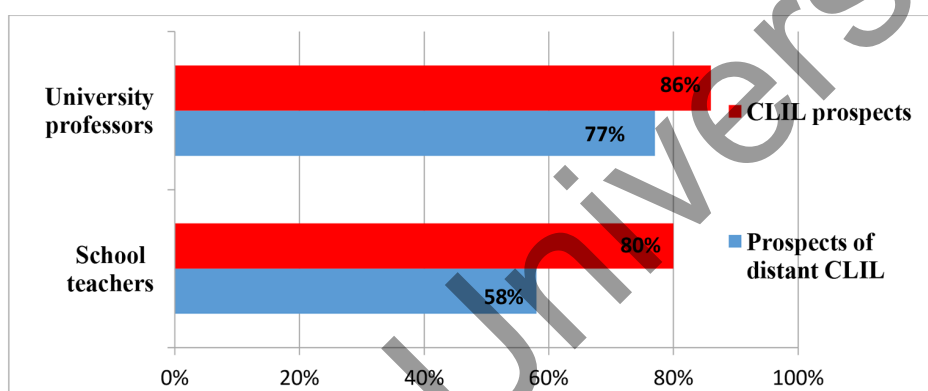


Fig. 2. Assessment of the integrated format prospects

This idea of effectiveness correlates with the teachers' responses about the level of students' interest in distance CLIL learning. Every second teacher believes that students do not welcome this approach in teaching. Perhaps, it was about middle school students. At the same time, the majority of school teachers (78 %) and university professors (90 %) admitted that students do not deny the integrated format of technology. According to the teachers, the main difficulties in distance learning of a subject in English for school children is independent work, and for students is a large amount of educational material. Moreover, according to the respondents, these difficulties are overcome as students move to the graduation stage.

Conclusion

The conducted analysis of the survey in the context of the stated goals and the survey

topics could form a reasonable idea about the features of the CLIL technology application in distance education in educational institutions of Kazakhstan as well.

The similar opinion of the majority of respondents confirms the prospects of integrating the two teaching technologies in the system of school and university education. As a result, this can form a viable tool to empower CLIL learning and develop a virtual learning environment, including through the development of e-learning resources. The need for such a tool is confirmed by the expert assessment of the respondents, who say that the main problem in the implementation of CLIL training in the distance format is weak resource support.

There is a subjective need of school teachers and university professors for technical and methodological resources, as well as for the acquisition, development and improvement of the basic competencies of

teachers to develop the necessary resources, for example, the level of language training, IT competencies, skills for adapting methodological developments to a virtual learning environment, etc. Hence, there is a need to revise the professional development programs for subject teachers, including the development of educational content for distance CLIL learning.

The integration of technologies can be effectively used to develop the education-

al trend of» Internationalization at home», which is associated with the introduction of academic mobility programs in a distance format.

The results obtained make it possible to determine tactical measures for the institutional development of the resource base for CLIL distance learning and potential mechanisms for mutually beneficial experience exchange between CLIL school teachers and university professors in the Republic.

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