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**CLIL WORKS IN TEACHING ICT IN PRE-SERVICE LANGUAGE
EDUCATION**

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Abstract

The potential of Content and Language Integrated Learning for developing intercultural competence makes it one of the instruments to pursue a policy of internationalization in tertiary education. However, the creation of certain learning conditions for the successful implementation of different CLIL models is still a controversial issue. There is little research in Russia focused on the plurilingual curricular model of CLIL for university students. The study explores its value in pre-service language education. To create a foreign language-rich environment, 'ICT in Professional Development' was introduced in English to first-year Linguistics students at Novosibirsk State Technical University. As a research methodology, action research was chosen due to its high level of practical relevance in educational research. The data collected from two cohorts of students through lesson observation, semi-structured interviews, and students' evidence of learning served to identify factors engaging students in studying ICT in English and to evaluate conditions favourable for the achievement of ICT in PD course learning outcomes. The qualitative and quantitative data proved a high educational value of CLIL to students interested professionally in ICT and L2. However, even in a highly motivating environment the students tended to rely on their learning strategies to overcome content and language difficulties. The various factors that influence the student's choice of either L2 or a mixed code or L1 can be considered highly individual and situation-related. To provide more learning opportunities for students to choose from, we revisited lesson plans, teaching materials, and tasks with differentiating and scaffolding techniques.

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1. Introduction

Content and Language Integrated Learning as an approach integrating teaching content from non-linguistic subject areas with teaching a foreign language has become a widely discussed theme in recent publications on applied linguistics and language teaching methodology. The literature suggests that an introduction of CLIL into curriculum produces a positive effect on teachers' motivation with its novelty and learners' motivation (Doiz et al., 2014), which Bruton (2013) explains by learners' developing "a group consciousness of being exclusive" (p. 594). It provides more extensive foreign language practice in comparison with "the provision of a foreign language simply as a curricular subject" (Dobson, 2020, p. 510). The researchers also focus on differences between CLIL and non-CLIL groups. Thus, in assessing the progress in developing subject and language skills, they report that CLIL students significantly outperform non-CLIL students (Hughes & Madrid, 2020, p. 57). Moreover, according to Porto (2018), CLIL could provide stimulating ground for developing learners' "democratic competences and values" (p. 18) when it adopts an intercultural outlook by offering students opportunities for transnational collaboration.

In contrast, there are some problematic areas with CLIL acknowledged in the literature. Having analyzed publications dealing with CLIL classroom problems Meyer et al. (2015) have come to the following conclusion:

CLIL teachers continue to use input-based approach without paying attention to developing learners' autonomy;

There are few resources and materials for teachers to support successful CLIL practice;

Teachers have no guidance on integrated assessment of content and language (p. 45).

This is in line with Canado (2016) who describes the outcomes of the European study of CLIL teachers' needs. The researcher reports the scarcity of CLIL teachers in schools and emphasizes that for teachers the introduction of CLIL leads to the increased workload because for the language teachers it involves expertise in subject content while for the content teachers it necessitates mastering of the foreign or second language, which also requires extensive staff training in CLIL teaching methodology (p. 203). Similar problems are reported about implementing CLIL in Russian universities, with particular stress on the lack or low foreign language proficiency of content (non-linguistic) faculty (Polenova, 2017).

Some researchers express doubts about the relevance of applying CLIL to teaching cognitively demanding subjects to young learners (Hughes & Madrid, 2020; Otwinowska & Foryś, 2017, p. 476). There are also research findings that indicate low potential of CLIL as a method of mastering a subject through a foreign/second language, e.g., Sylven (2013) reports that in Sweden CLIL students did not gain as good competence in the subjects studied as their non-CLIL peers (p. 302), which she explains by the choice of the target language. As it turns out, the average level of English language proficiency among the majority of population in Sweden is very high, and non-language subjects' teachers without specific training in dealing with a foreign language do not pay much attention to students' interaction in the classroom, that is crucial for acquiring subject knowledge and developing communicative skills.

As far as educational context of Russia is concerned, the research done in St-Petersburg Peter the Great Polytechnic University demonstrates positive influence of CLIL on students' motivation,

developing language skills, and indicates similar level of acquired non-language subject knowledge as in non-CLIL groups (Baranova et al., 2019). However, another research carried out at the same university reveals the problem of defining the criteria for distinguishing CLIL from ESP (English for Specific Purposes) and EMI (English as a Medium of Instruction). The experimental CLIL teaching succeeded the ESP course, and the researchers were not sure if the positive effect of the course could be explained only by application of the CLIL methodology (Khalyapina et al., 2017, p. 1111).

After studying the pros and cons of CLIL implementation in different countries and levels of education, one can conclude that the advantages of CLIL methodology can outweigh the disadvantages, in case there are some favourable conditions provided for its implementation. To adopt a plurilingual curricular CLIL model in the pre-service translator and teacher education, research was carried out at the Department of Foreign Languages at Novosibirsk State Technical University (NSTU).

2. Problem Statement

Bachelor students majoring in Translation Studies and Foreign Language Teaching require more than a formal educational setting to progress in English proficiency before entering working life. But in Russia as well as in countries where English is not the first language, there is no need to use English unless you meet a foreign tourist by chance which is not a frequent case. The reality puts students in less favourable learning environments depriving them of the opportunity to practise English regularly and developing their communicative competence faster and better. To solve this practical research problem, we have taken a plurilingual curricular model of CLIL as it enables to expose students to natural communication in a professional environment. If it is argued by CLIL theorists and language practitioners that the CLIL model can allow students of a reasonable level of foreign language proficiency to develop their content skills (Coyle et al., 2010), it has been expected to succeed with undergraduates of Linguistics studying ICT in English.

3. Research Questions

This study seeks to address the following research questions. (1) What language do students choose to engage in communication on ICT in PD? (2) What helps students achieve ICT in PD course learning outcomes?

4. Purpose of the Study

The purpose of this study is to explore the value of a plurilingual curricular model of CLIL in teaching “ICT in Professional Development” (ICT in PD) and ESP to bachelor students in Translation Studies and Foreign Language Teaching. Following research objectives would facilitate the achievement of this purpose: (1) to identify learning conditions that allow students to develop their professional skills both in ICT in PD and ESP in the CLIL classroom; (2) to evaluate advantages of ICT in PD learning in L2 for students in Linguistics.

5. Research Methods

The practical research problem determines an action research (AR) approach to the study. “The acceptance and prestige of this research approach is growing in research in Information systems” (Goldkuhl, 2012) as well as among theorists in Social and Behavioural sciences. Qualitative research becomes appropriate to investigate the social nature and behaviour of people. As analysis of the current CLIL practices has shown, the results of implementing CLIL methodology can be defined as context-driven. However, regardless of the educational contextual differences, as Gabillon (2020) inferred, it “would not influence the theoretical principles underlying [CLIL] approach”.

5.1. Participants

The participants of the study were first year students of Bachelor program in Linguistics, majoring in Translation Studies and Foreign Language and Culture Teaching at NSTU. According to the Curriculum in the second semester they study ICT in PD, which is a skill-based course aimed at boosting students’ ICT skills in their language studies and future professions of either a translator or a teacher. By the end of the course students are expected to become aware of various Web 2.0 tools, copyright law and rules of a netiquette, evaluate and design blogs, slideshows, surveys, mind-maps, podcasts and others, use web resources for language studies effectively and use online templates to design language learning activities. The subject had been traditionally taught in Russian, a native language for both students and teachers, before CLIL was introduced. Every lesson of ICT in PD gave many opportunities to naturally integrate subject content and English language learning. What became a starting point for introducing CLIL and planning action research were regular and multiple switches from Russian to English within each lesson. As a result two cohorts of students in 2019/20 (N=44) and in 2020/21 (N=58) were involved in action research. Students’ English proficiency levels ranged from A2+ to B2.

5.2. Procedures

The AR approach followed a spiral model of the following reflective cycles: planning to implement educational change → implementing and observing the process of change implementation and consequences → reflecting on the processes of change → re-planning an educational change, etc. (Kemmis & McTaggart, 1988). The practical value of the spiral model lies in the ability to understand how the CLIL model works and constantly improve it.

AR was realized through the following techniques. (1) Lesson observation with the focus on students’ participation in meaningful interaction in English, their dealing with content-based and language difficulties. (2) Semi-structured interviews at the end of the semester with the questions about students’ personal achievements through the course, content and language difficulties they encountered and ways of overcoming those. (3) Students’ evidence of learning such as students’ reports, assignments fulfilled and final projects created.

The procedures of gathering data can be described as follows. (1) The lesson observation was done by a teacher concerned and researcher when teaching happened. Forms for focused observation were used for recording the data. (2) About individual interviews, questions to be asked and time allocated the

students were notified in advance. The structured interview data were recorded in the form of filling in a questionnaire, whereas note taking was chosen for open-ended responses. (3) Students' evidence of learning collected during and at the end of the semester included weekly assignments and final projects and used for summative assessment. Formative assessment was aimed at identifying students' problem areas, scaffolding and improving teaching materials for the CLIL lessons.

6. Findings

6.1. What language do students choose to engage in communication on ICT in PD?

The first research question aims to identify a language that makes students engaged in studying ICT in PD. The subject syllabus contains only English-Russian glossary with pronunciation and definition of the terms, and excludes any exercises explicitly directed to language learning in contrast to General English or ESP lessons that develop linguistic and communicative competences. Nevertheless, by the end of the course students are expected to practice and improve their English language receptive and productive skills. Can students study the content without switching to L1? We have made an attempt to conclude about the student engagement in cooperative and individual speaking tasks from focused lesson observation, listening and reading tasks from semi-structured interviews, and writing from students' weekly assignments. The types of practice tasks and the language they used to complete the tasks are the following (table 1).

Table 1. The types of practice tasks and the language students chose studying ICT

Type of practice task	Mixed utterances, learning materials used in L1 if difficult in L2					
	L2		L1		L1	
	Cohort 1	Cohort 2	Cohort 1	Cohort 2	Cohort 1	Cohort 2
Cooperative speaking tasks	46%	51%	45%	42%	9%	7%
Individual speaking reports	68%	85%	17%	13%	5%	2%
Listening tasks (video)	38%	55%	50%	36%	12%	9%
Reading tasks	68%	77%	25%	17%	7%	6%
Written reports	69%	94%			31%	6%

As seen in Table 1, compared with C1 students, on average 7% more C2 students used L2 doing all the tasks except for writing reports – 15% more; 5% less C2 students used mixed code except for reading tasks – 15%; 3% less used L1 except for written reports – 25%. The positive tendency may be caused by the fact that C2 students possess either a higher language or ICT level. But the higher difference in the number of students preferred one of the three codes for writing reports and reading demonstrates external factors influenced the choice C2 students. Reflection on the choice of a language by C1 students identified difficulties in the content and language areas. To improve the situation the following changes were made. (a) Communicative functions with examples were provided to fulfil speaking tasks cooperatively. (b) More detailed guidelines were developed for making speaking reports individually. (c) Two or three (more than one) videos and texts presenting new material were given to students to choose from. (d) Examples of written reports were provided. (e) Some tasks were revisited

and changed to more appropriate balance between the language level and cognitive load. (f) Some lesson plans were revisited in terms of more scaffolding strategy. After the introduction of the revisited CLIL plan, as the table shows, more than half C2 students chose L2 for doing all types of activities whereas only 38% of C1 students read new content in L1, 50% read the same content in both L1 and L2. Almost all C2 students (94%) made home assignment reports in L2. As most of the ICT in PD tasks are expected to be done individually, e.g. create a blog, record a podcast for your blog, etc., and speaking takes less place than other language skills in class, the number of C2 students speaking in groups did not increase enough.

6.2. What helps students achieve ICT in PD course learning outcomes?

For the second research question we interviewed students on completion of the e-projects at the end of the semester. The semi-structured interview contained closed-ended questions on the ICT in PD content to identify really interesting tasks to students and the most challenging ones. The responses below were given by C1 and C2 students to the open-ended question 'What or/and who helped you overcome the difficulties with practice-oriented tasks of the course?' with the follow-up question 'Did you do that in English or in Russian?': *'I always tried to carefully read the assignments and follow all the recommendations. In English.'* *'To do some tasks I needed help of the Internet. First in English, than in Russian if not clear.'*, *'I think Google helped me a lot. Both.'*, *'There were no difficulties on my way, but sometimes I watched tutorials on YouTube. No difference.'*, *'I used to do all tasks by myself, but sometimes I asked my groupmates for advice. When we were in class, then in English.'*, *'My teacher's tips. Emails in English.'*, *'My friend. In Russian.'*, *'If I had some difficulties, I asked my classmates or watched tutorials on how to use these apps. It depends.'* *I coped with difficulties thanks to clear instructions. There were in English.'*, *'More often I had to read more in order to complete the tasks. Both.'*, *'A more detailed study of the websites. The websites were in English', etc.*

It is important to know that even outside the classroom, the students tried to fulfil content tasks searching for help and more information in L2 developing all language skills with communicative purposes. Their sharing experiences on creating blogs and using Web 2.0 instruments in English show that they devoted a lot of time trying to do all the tasks as better as possible, e.g. every student recorded a podcast for the blog more than 3 times on average. Interestingly, the task instruction did not contain any requirements for creating a podcast except for following copyright law and netiquette. Starting a podcast for a blog motivated students as bloggers to improve pronunciation and reading skills.

To examine the quality of the final e-projects we analyzed C1 and 2 students' final scores on completion of ICT in PD course. The analysis of the final e-projects indicates that nearly 89% of them were completed on time, whereas the rest of them were handed with a delay but complete. More than half of all the students (59%) in addition to the required tasks did optional tasks and added them to the e-projects, despite the fact that they were not supposed to be evaluated and did not give any extra points. More than one third of all the projects (37%) were given the highest score (87-100 points). Less than a half (45%) received good score (73-86 points), and less than a fifth (18%) met not all the requirements to the e-project (50-70 points) though received satisfactory score. Only in 2.3% of the e-projects some tasks were presented in L2. It should be noted that we have provided an average percentage for both cohorts

though the percentage of C2 indicates 2-5% progress over C1 which is not significant, and it is likely due to many factors, not only due to the improved teaching material.

7. Conclusion

The results of this study indicate that even in the classroom nearly half of the students choose either L2 or a mixed code to do course tasks cooperatively, whereas for an individual prepared report they mostly choose L2. The evidence suggests that to increase the percentage of students' choice of L2 for those types of oral communication, communicative functions with examples can be provided, and more detailed guidelines, respectively. To influence student choice of L2 for listening and reading outside the classroom, we can provide a variety of authentic resources that differ in the levels of content, language, and cognitive skills required. A product-oriented approach with examples of written reports increases student confidence and choice of L2. Interestingly, the students' responses about the factors that helped them achieve the course learning outcomes relate not so much to overcoming difficulties as to successfully completing tasks. Students can invest their time in the learning tasks that interest them, and improve their works until they achieve the desired results; moreover, this is their personal choice. Therefore, it seems that the CLIL approach engages students in using L2 naturally, shifting the focus from L2 to professional areas.

The research limits refer to the main feature of the AR approach, which lies in the difficulties in distinguishing between action and research. However, the same feature made it possible to identify immediate problems in the CLIL classroom and improve and use CLIL teaching practice to its potential.

The most obvious finding to emerge from this study is that a plurilingual curricular model of CLIL can be successfully implemented in pre-service language education. The case described its introduction into the curriculum for training students in translating and foreign language teaching can contribute to the in-depth knowledge about the value of teaching subjects of high professional priority to students in a foreign language prioritized the same high.

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