

Developing students' communication skills in Mathematics lessons using CLIL approach

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Развитие коммуникативных навыков учащихся на уроках математики, используя подход CLIL

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Abstract: *this article discusses the idea of developing students' communication skills in mathematics lessons in NIS through the approach of Content and Language Integrated Learning. For the development of language skills teacher supports students and offers useful phrases that students can use in discussing activities.*

Аннотация: *в данной статье рассматривается идея развития коммуникативных навыков учащихся на уроках математики в НИШ посредством подхода предметно-языкового интегрированного обучения. Для развития речевых навыков учитель поддерживает учащихся и предлагает полезные фразы, которые учащиеся могут использовать при обсуждении заданий.*

Keywords: *communication skills, CLIL approach (Content and Language Integrated Learning), Math lesson, activity.*

Ключевые слова: *коммуникативные навыки, подход CLIL (предметно-языковое интегрированное обучение), урок математики, задание.*

CLIL describes an evolving approach to teaching and learning where subjects are taught and studied through the medium of a non-native language. The experience of learning subjects through the medium of a non-native language is more challenging and intensive as there is more exposure to the language and learners acquire knowledge and skills in different areas of the curriculum. In CLIL, some curriculum subjects are taught through the target language [1, p. 2]. In Nazarbayev Intellectual Schools (NIS) some subjects, such as Economics, Information and Communication Technology (ICT), Maths, Science are taught through English and Geography, History are taught through Kazakh.

There are various types of CLIL which teachers required to use in the classroom. For instance, subjects are taught in L2 by a non-native teacher or an international teacher provides a support for learners during the lesson.

According to the questionnaire taken among learners of 11 grades of NIS some benefits of implementing CLIL approach in the teaching process can be identified:

- Learners are more interested in learning Mathematics through English rather than in traditional content classrooms;
- Learners focus not only on Mathematics, but also on English;
- Learners develop their communication skills in English.

Content teachers at Nazarbayev Intellectual Schools support the implementation of the trilingual policy by developing learners' communication skills through subject-specific academic language. This involves providing a language objective for the lesson such as «Learners will use appropriate mathematical terms to describe steps in factorising polynomials». In addition, rich language scaffolding which includes useful phrases for dialogue/writing are provided for learners in an organised and systematic manner in order to foster rich learner use/output of content and language. [3, p. 10].

Many content teachers ask question: «What type of language do I need to teach my students?» CLIL teachers do not have to teach their learners the language which the study in their normal English classes.

In order to develop students' communication skills subject teachers have to teach them both *content-obligatory* and *content-compatible language*. *Content-obligatory language* is the subject specific vocabulary; grammatical structures and functional expressions learners need to:

- ✓ learn about a curricular subject;
- ✓ communicate subject knowledge;
- ✓ take part in interactive classroom tasks [2, p. 3].

Content-compatible language is a language which learners have already learned in their normal English classes and can use it in the Math lesson in order to give a full answer.

Table 1. Example of content-obligatory and content-compatible language

<i>Content-obligatory language</i>	<i>Content-compatible language</i>
coefficient, variable, root, remainder, quotient, linear factor, quadratic factor, factorise, factorised form, canonical form, polynomial	
Factorise the polynomial completely by comparing coefficients.	numbers complete This means... letters of alphabet find
Given that the roots of the polynomial are... , find the coefficient of...	root divide
Use Horner's method to find the remainder when...	

To encourage students in speaking activity a teacher can use the following speaking activities in Mathematics lesson:

- making statements describing mathematical models in the training language and in English;
- expressing views and opinions clearly, taking part in discussions, communicating with teachers and fellow learners;
- giving explanations, presenting ideas in groups and class streams [3, p. 14].

For example, tell students they have 5 minutes to discuss the algorithm of solving the word problem: A 555-mile, 5-hour plane trip was flown at two speeds. For the first part of the trip, the average speed was 105 mph. Then the tailwind picked up, and the remainder of the trip was flown at an average speed of 115 mph. For how long did the plane fly at each speed? Students work in pairs and discuss a solution. A teacher can support learners with useful phrases for dialogue, such as:

- ✓ Could you explain it, please?
- ✓ Would you mind explaining it in detail?
- ✓ What do you mean?
- ✓ Could you be more specific, please?
- ✓ You misunderstood. Let me explain.
- ✓ Firstly,.../Secondly,.../Next,...
- ✓ To solve this problem...
- ✓ You are right.
- ✓ Exactly. Definitely.
- ✓ I think so.

References

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