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Scaffolding techniques within the context of teaching English for students of electronics

The article deals with the new approach to process of teaching English as a language of science using scaffolding techniques as a part of CLIL technology. The example of the learning process is given and the main fundamental principles are discussed.

Globalization has made the world interconnected in different ways. New technologies and techniques are facilitating the exchange of information and knowledge. This is driving the integration of the world economy and huge changes in all spheres of our lives converting the world into a global village. Physical and virtual mobility is having an impact on teaching and learning different subjects and languages as well, especially it influences on how we teach and what we teach science students in the context of foreign language education.

CLIL technology (*Content and Language Integrated Learning*) is widely used our days in educational establishments of different levels for learning foreign languages, as well as bilingual and multilingual education. This technology has a three-way focus on content, language and learning skills.

Scaffolding techniques are in the center of CLIL methodology. *Scaffolding theory* was first introduced in the late 1950s by Jerome Bruner a cognitive psychologist. These techniques all have strong foundations in the theories and studies of the following eminent educators:

Stephen Krashen, his Theory of language and learning acquisition;

Benjamin Bloom's Taxonomy of tasks and critical thinking skills;

Lev Vygotsky's Zone of proximal development and the stress on pre-teaching to help the acquisition of new knowledge;

Howard Gardner's Theory of multiple intelligences;

Peeter Mehisto, David Marsh and Maria Jesus Frigos CLIL approach,

John Hattie's studies on the Importance of making learning visible;

Ron Berger's Project-based learning and his insistence on creating a Culture of trust and excellence in the classroom

A *scaffold* is a temporary framework that is put up for support and access to meaning and is taken away when the student feels success and masters tasks, concepts. In the classroom scaffolding techniques consist of helping interactions between the teacher and the student that enable the student to do something beyond what he could do independently, in this case, foreign language acquisition and content of information on electronics [1].

Through scaffolding techniques when used strategically and correctly English Language learners are given the opportunity and the necessary support to acquire language while meeting rigorous academic standards. They include: building on a student's existing knowledge, skills, attitudes, interests and experiences; repackaging information in user-friendly ways; responding to different learning

styles; challenging students to take another step forward and not just in comfort; fostering creative and critical thinking [2, p.29].

Some examples of scaffolding techniques proposed by Donna Lee Fields in *101 Scaffolding Techniques* appropriate for the work with students of electronics are here. We take 8-10 sentences from the unit in our textbook [3] and write them separately on the blackboard. Students work in groups, and receive the tasks: a) rewrite the sentences in passive voice or whatever other grammar structure; b) draw an illustration that represent the idea of the sentence. When the work is finished, one of the students reproduces on the board the converted sentences or the other one demonstrates one of the illustrations that groups have done. The other students guess which sentence the illustration represents. The tasks can be different, but the sentences chosen for work introduce key information of the unit from the textbook. Having the assignment to read the text at home students soon realize that they recognize much information from the unit. The activity is designed so that students have to read, draw and use key content from the unit. Having been introduced to the information in such an active manner, the vocabulary and content is much more cognitively accessible to them in their future discussion. The goal of the activities is that all students learn and support each other. The classroom is an environment of trust and the expectation of excellent results. Students help each other to produce the best version of their work as possible. Respectful critiques are continual between students, and students and teacher. The byproduct is self-confidence of students. Another technique is used for learning the names of the everyday tools for easy repair and explaining what they are used for. It is worthy to use the principle of 'a looking glass'. Identical images of instruments on the cards. The first group of students is supplemented with cards with questions ('What is it?' and 'What is it used for?') and the other group has cards containing explanations. Students work together but one of them is turning over one card at a time, trying to answer the question presented, and the other is making questions from the answer given.

Mentioned here scaffolding activities have some cognitive benefits:

Students learn to work together in collaboration towards a common goal, helping each other in the process;

the activities combine reading, aural comprehension, speaking and writing. Meaningful repetition of material helps to deepen the process of acquisition of language and content.

the possibility to mix cross-curricular information helps students to make the learning experience more challenging and more meaningful,

working in pairs or in groups helps students to create a safe environment especially positive for less confident students,

information can be written with either more or less difficult vocabulary depending on the students' level.

It's not a secret that teaching in CLIL requires more preparation time and greater co-operation among teachers. It takes a conscious effort to set content and language information, use activities that involve all students into the process of learning. Since ready-made learning materials are in short supply, teachers often spend considerable time developing or adapting existing resources.

The main reason why these techniques are so successful is because one of its fundamental principles is quality of education. The elements are the following: holistic education, competence based learning, learner autonomy, fostering creativity and critical thinking. Another fundamental principle of scaffolding techniques in the context of CLIL is that we need examine our own expectations of our students and remember that all students matter and all students deserve the same opportunities to bring out the very best part of them so that they will be able to take an active part in building our society.

References

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