**TEACHING ENGLISH BY CLIL AND STEM EDUCATION**

Rapid evolution of technology leads to the fact that soon the most popular specialists on the planet will be programmers, IT specialists, engineers, professionals in the field of high technologies, etc. At the moment, the science of education has approached the moment when we need to create pedagogical technologies that ensure the most important thing in the educational process is the development of the personality of each student, their activities. It is necessary to create such learning conditions when the student aspires to get new results of his work and subsequently successfully apply them in practice. It is known that the future will require from them a huge store of knowledge, not only in their chosen specialty, but also in the field of modern technologies. At present, the fourth technological revolution is taking place in the world: rapid information flows, high-tech innovations and developments transform all spheres.

Our modern humanistic concept of education puts before all disciplines the following three main goals:

-Discover the basics of science;

-Systematize and generalize knowledge, skills;

-To promote the identification and development of students' abilities through implementation of the first two installations. To fulfill these goals, modern education needs to develop a new methodology based on integrated processes in which the objects of research are all the links of the educational system and their interaction with society and human. One of such forms in teaching is the STEM and CLIL methods, where English acts as a tool for studying other subjects. If earlier in the labor lessons girls sewed aprons, and boys worked with woods, now this is not enough. Robotics, design, programming, modeling - that's what modern students are interested in. To implement these interests, more complex skills and competencies are needed. The "STEM" was first proposed by American bacteriologist R. Colvell in the 1990s, but actively began used since the 2000s. STEM is an integrated learning approach in which academic scientific and technical concepts are studied in the context of real life. The goal of this approach is to create sustainable links between school, society, work and the whole world, contributing to the development of STEM literacy and competitiveness in the global economy.

STEAM - education is based on the idea of ​​learning using an interdisciplinary and applied approach. Instead of studying a separate discipline, STEAM integrates them into a single training scheme. STEAM:

S - Science;

T - Technology;

 E - Engineering;

A - Art;

M - Mathematics.

Or: natural sciences, technology, modeling, art, mathematics.

Currently, STEM is one of the main trends in the world education. Thanks to the rapid development of new technologies profession, the demand for STEM specialists is growing everywhere. A new trend in the global system of STEM has become educational robotics, which allows developing programming and engineering skills, being an integrator of all four components of STEM. In Kazakhstan, the active development of STEM education has also begun.

This is confirmed by the indicated transition to the updated the content of school education in the context of STEM within the framework of the State Program for the Development of Education and Science for 2011-2019. To implement the new educational policy, it is planned to include in the curricula of STEM-elements aimed at the development of new technologies, scientific innovations, mathematical modeling. A new interdisciplinary and projected approach to learning will be introduced that will allow schoolchildren to strengthen research and scientific and technological potential, develop skills of critical, innovative and creative thinking, problem solving, communication and teamwork. The number of "cross-cutting themes" between subjects of the NMD will increase. Since 2019, in the upper grades, subjects of the natural-mathematical direction will be studied in English, which will facilitate the acquisition of new knowledge in the language of the primary source and entry into the world scientific community. Advantages of STEM-education:

1. Integrated training on "topics", not on subjects.

STEM-training combines an interdisciplinary and project approach, the basis for which is the integration of the natural sciences into technology, engineering creativity and mathematics. It is very important to teach science, technology, engineering and mathematics, because these areas are closely interrelated in practice.

 2. Application of scientific and technical knowledge in real life.

STEM-education through practical exercises demonstrates to children the application of scientific and technical knowledge in real life. In each lesson they develop, build and develop products of the modern industry. They study a specific project, as a result of which they create a prototype of a real product with their own hands.

For example, young engineers building a rocket get acquainted with such concepts as the process of engineering design, launch angle, pressure, stretching force, frictional force, trajectory and coordinate axes.

3. Development of skills in critical thinking and problem solving.

STEM programs develop the critical thinking and problem solving skills necessary to overcome the difficulties that children face in their lives.

4. Increase self-confidence.

Children, by creating different products, building bridges and roads, launching airplanes and cars, testing robots and electronic games, developing their underwater and air structures, each time closer and closer to the goal. They develop and test, develop and test again, and improve their product.

In the end they, solving all problems by themselves, reach the goal. For children this is inspiration, victory, adrenaline and joy. After each victory they become more confident in their abilities.

 5. Active communication and teamwork.

STEM programs also feature active communication and teamwork. At the discussion stage, a free atmosphere is created for discussions and statements of opinion. They are so free that they are not afraid to express any opinion; they learn to speak and present. 6. Creative and innovative approaches to projects.

STEM training consists of six stages: the question (task), discussion, design, structure, testing and development. These stages are the basis of a systematic project approach. In turn, coexistence or the combined use of various opportunities is the basis of creativity and innovation. Thus, the simultaneous study and application of science and technology can create many new innovative projects. Art and architecture are a wonderful example of coexistence.

7. Preparing children for technological innovation of life.

STEM programs also prepare children for a technologically advanced world. Over the past 60 years, technology has developed strongly, with the discovery of the Internet (1960), GPS technology (1978) to DNA scanning (1984), and of course to the iPod (2001). Today, almost everyone uses the IPhone and other smart phones. Without technologies, it is not possible for our world to be present today. It also says that technological development will continue, and STEM skills are the basis of this development.

8. STEM as an addition to the school curriculum.

STEM programs for schoolchildren aged 7-14 are also designed to increase their interest in their regular classes. For example, in physics lessons, the forces of the earth are stretched, explained with formulas on the board, and in STEM mugs schoolchildren and running parachutes, rockets or airplanes can strengthen their knowledge. Schoolchildren do not always easily understand terms that they do not see or hear. For example, pressure or volume expansion due to temperature increase. In the STEM classes, they, while doing entertainment experiments, can easily understand these terms. If the STEM-education prepares children for the technological developed world and is the bridge connecting study and career, then the following CLIL technique (Content and Language Integrated Learning) characterizes the learning situations when disciplines or their separate sections are taught in English, thus pursuing a two-pronged goal: the study of the subject and the simultaneous study of foreign language. In this case, the language becomes not an object of learning, but its means. The language is integrated into the general curriculum, and knowledge of the language becomes a means of studying the content of the subject. Students are thereby motivated to use language in a context where they are interested in the topic.

Learning the language becomes more focused, as the language is used to solve specific communicative tasks. This technique can be used both in the initial link, and in the middle and senior links. CLIL considers the study of a foreign language as a tool for studying other subjects, forming in students the need for study, which allows him to rethink and develop his abilities in communication (including in the native language) Getting in a situation of communication on a foreign language, students are unable to show their knowledge in the fields of special knowledge-building, pedagogy, medicine, etc. Without the knowledge of a foreign language for these specialties, they do not have the opportunity to communicate in a professional context. In addition, students may be limited in access to information resources on their interests or subjects. With the correct consideration of all the above factors of studies based on the CLIL methodology, it will allow to solve the following educational goals and tasks:

- To increase the motivation of students to learn a foreign language;

-To teach students to knowingly and freely use a foreign language for solving everyday tasks of communication;

- Develop students' knowledge and understanding of other cultures;

-Prepare students to continue their education and work in the global context and, most importantly,

-To develop linguistic and communicative competencies through the use of a foreign language in a natural and modern way.

Literature:

1. The Case of Thurlow. Ten trends in modern education

URL: https: //www.hse.ru/news/media/6384179

2. "Білімді ел - The Educated Country" №20 (57) of 25 October 2016.

http://iac.kz/en/publishing/development-stem-education-world-and-kazakhstan