

# EVALUATION OF “LEARNING-TO-LEARN” METACOMPETENCY USING ACTIVE LEARNING AND AUTHENTIC ASSESSMENT TOOLS

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*The paper provides findings on development and evaluation of “learning-to-learn” metacompetency drawn from recent analyses of more than 20 years implementation of Interdisciplinary Thematic Curriculum for gifted students in the Baku European Lyceum (Azerbaijan). The objectives includes: 1) key analyses of the role of active learning methods and the authentic assessment approach in evaluation of metacompetencies; 2) practice sample of using the tools of active learning and authentic assessment in evaluation of “learning-to-learn” metacompetency.*

*In the modern education active learning and formative assessment methods acquire the special importance in connection with the need to develop and evaluate metacompetencies as part of the 21st century competencies. Authentic assessment approach as a form of performance-based formative assessment engages the students to perform real world tasks that demonstrate meaningful application of essential knowledge and skills reflected and to fashion performance effectively and creatively. Active learning as well as authentic assessment methods (reflection, feedback, graphic organizers, writing samples, portfolios, self-assessment) shifts the learning process from the acquisition of knowledge to the guidance the students toward the development of their own “learning-to-learn” skills (referred to “metacognitive” strategies) and help in assessing their own progress.*

**Key words:** *evaluation of “learning-to-learn” metacompetency, metacognition, active learning, authentic assessment tools*

The students’ learning needs for the 21st century are correlated with emerging challenges in the workplace, in a diverse democracy, and in an interconnected world. It is why the education in our days should be orientated to develop certain abilities, to meet challenges of today’s rapidly developing world and dramatic increasing and flow of new information and knowledge. Students should have the skills to obtain new knowledge independently, analyze information in a creative manner, think critically, reflect on and draw conclusions from received information. In this case “**learning-to-learn**” **metacompetency** is crucial for lifelong learning which is the main vital need in modern society.

What does “learning-to-learn” metacompetency looks like and what are the developmental stages for getting there? The structure of “learning-to-learn” metacompetency consists of the main 4 cognitive skills related to learning and developed step by step:

- 1) how to access information themselves,
- 2) how to interpret and analyze it,
- 3) how to draw logical and coherent conclusions,
- 4) how to assess their own work and activities and to think about own thinking and learning.

The last one is the most important for students in order to become “intentional learners” who are purposeful and self-directed. Intentional thought about one’s own thinking and learning is **metacognition**. It is generally regarded as an essential component of successful thinkers and learners. Metacognition is type of reflective process which helps students constantly monitor their understanding and progress during problem solving and allow them to decide when their current level of understanding is not adequate. As a result the learners who are educated as “intentional learners” are becoming highly motivated, independent, and strive toward self-direction and autonomy.

Metacognition as component of “learning-to-learn” metacompetency comprises various domains of skills and abilities. They can be divided into *cognitive* and *affective skills and abilities*:

- Metacognition as **cognitive** ability and a sense of awareness has been understood as knowing *what you know and what you don’t know*. It is providing for students the opportunities to reflect on their thinking, practices, and learning, they are better able to set goals, develop a variety of learning strategies, and control and evaluate their own learning process.
- **Affective** domain of metacognition includes feelings, attitudes, and dispositions to engage in cognitive activities. Metacognitive reflections provide students with opportunities to manage and assess their own thinking strategies, monitor and control of attitudes, such as students’ beliefs about themselves, their personal responsibilities in accomplishing a goal and so on. Emotions have been raised during the metacognition also affect the student’s self-esteem, motivation and ability to regulate his or her own learning. Affective components of metacognition, such as self-awareness, self-control, compassion, co-operation, flexibility, and the ability to make judgments on the value of information serve students well in school and throughout their lives.

In the modern education **active learning and authentic assessment approaches** acquire the special importance in connection with the need to develop and evaluate “learning-to-learn” metacompetency as part of the 21st century competencies. They become a crucial elements of teaching and learning process.

The essence of **active learning approach** is that learning is not based on the enrichment of students' memory by the new scientific knowledge or information, but on the systematic development of thinking, self-acquisition and “learning-to-learn” skills. The dialogic nature of active/interactive learning reflected in collaboration of students and teachers, joint problem solving, group interaction and feedback not only leads to deeper and more effective learning, but also lays the groundwork for being a self-directing learner. Classroom practices are influenced by teachers’ and pupils’ beliefs about learning. The students’ learning outcomes are the result of classroom interactions with teachers, peers and resources. At the same time active learning is providing the problem solving activities which help students to understand their vital role in the learning process.

Assessment is an important and integral part of active learning. Active learning is facilitating an **authentic assessment**. Establishing authentic assessment changed the classroom assessment culture towards encouragement of interaction and using of reflection and feedback tools.

Assessment may be undertaken in a very informal way (often simply called “feedback”) or in a formal way (where students are given a specific task to be taken at an established time). Authentic assessment approach in relation to “learning-to-learn” metacompetency may be considered as something “in-between” the two above. In this case, learning action is the main context for “learning-to-learn” assessment.

The aim of “learning-to-learn” assessment, however, is not only to try to assess or model students’ skills and abilities, but also to try to assess or model **how** they perceive academic tasks, and how they use their skills and abilities to solve problems. Students should engage in constant questioning: *What am I trying to accomplish? What is the best strategy for learning? How is my progress? Did I succeed? Why I succeed? What help me?* These include clarifying learning goals and criteria, reflecting on learning, and acting on formative feedback.

Application of these approaches to school curriculum is provided in Baku European Lyceum in the framework of “Interdisciplinary Thematic Curriculum” Program for gifted students more than 20 years. The Baku European Lyceum was established in 1991 in Baku (Azerbaijan) as an innovative school for gifted children and provides the education from 1<sup>st</sup> to 11<sup>th</sup> grade. The main mission of the Baku European Lyceum is to reveal the intellectual, creative and individual potential in gifted children as well as to create a conducive environment for development of their personalities and competencies necessary for life-long learners and for becoming the productive members of society. The most important innovation introduced by Lyceum is the Interdisciplinary Thematic Curriculum (ITC) – special developmental program for gifted children enabled the systematic development of critical and global thinking, creativity, research, problem solving, communicative and metacognitive skills, and promotes the personal growth and enjoyment of learning. The authors of this program are Dr. Sandra N. Kaplan (USA) and Dr. Natalia Shumakova (Russia). “Interdisciplinary Thematic Curriculum” Program is based on international principles of a differentiated curriculum for the gifted and active/interactive learning approach:

- a) Thematic interdisciplinary model;
- b) Global nature of problems;
- c) Problem solving approach;
- d) Development of self-directed learning, research skills.

Interdisciplinary content is built on the development of a big philosophical idea (theme) in the context of the various subject areas. The selection of a global theme as a focus of the yearly curriculum depends on the age (grade) of the students and the content of the basic subject courses. The nature of ITC prioritizes active building by students their understanding of new concepts (rather than merely absorbing information), develop a variety of strategies that enable them to place new ideas into a larger global context, and learn to judge the quality of their own and their peer’s work against well-defined learning goals and criteria.

ITC involves students to analyze and synthesize information, apply what they have learned, and demonstrate their understanding of material according to specified criteria. In these classrooms students work together to examine information and issues, solve problems, and communicate ideas. As a result they are also developing metacognitive skills that are invaluable for learning throughout their lives.

In the framework of this program *active learning* as well as *assessment* shifts:

- from the acquisition of knowledge to the guidance the students toward the development of their own “learning-to-learn” skills and help in assessing their own progress;
- from assessment of products by tests and other structured tools to authentic assessment by reflection and self-assessment of the process of creating these products.

Authentic assessment approach as a form of performance-based formative assessment engages the students to perform real world tasks that demonstrate meaningful application of essential knowledge and skills reflected and to fashion performance effectively and creatively. Students are educated to learn appropriate strategies of planning, self-monitoring, self-regulation, and self-assessment and apply it within the context of interdisciplinary content. Using authentic assessment approaches guide students toward development of their own “learning-to-learn” skills – skills that are increasingly necessary as knowledge is quickly outdated in the information society.

Authentic assessment tools are almost always framed in the form of learning experiences such as *reflection, feedback, self-assessment and rubrics*, and require students to connect (or synthesize) what they have learned to produce finished products. In the framework of Interdisciplinary Thematic Curriculum the teachers provide opportunities to realize these learning activities and help students see themselves and their performance more clearly. As the result the students also get the real-time information about the quality of their performance.

**Reflection** is using at the different stages of lesson. At the end of some of learning activity the students reflect what they did well, what they should do differently next time, what kind of new skills they should acquire. Reflection helps students to recognize the gaps that exist in their understanding. Metacognitive strategies also are using by means of different active learning methods such as KWL and PMI charts.

**Feedback** techniques (verbal/non-verbal, descriptive/constructive) integrated through-out the learning experience and based on sharing between the students or teacher-students by “user-friendly” information about performance and how improvement can be made.

**Self-assessment** is using as criteria-based assessment of how they are doing while they are performing some task and how well they did when the task is completed. The most useful self-assessment technique is **rubrics** and “**criteria-based chart**” for comparing the activities of group members. Rubrics can be used for product and process assessment. The skills could be evaluated by means of rubrics with several levels of competence :

- Novice
- Intermediate
- Advanced
- Proficient
- Expert

The research-based nature of learning activities in the ITC program allows the teacher to evaluate “learning-to-learn” metacompetency by using criteria reflected their main components. Evaluation of this metacompetency is based on *research papers, essay, performance projects*,

*oral presentations, using graphic organizers, writing samples, and portfolios* and other active learning methods as well as authentic assessment tools. For example, learning assignment related to independent research project provides opportunities to evaluate the several “learning-to-learn” skills, including metacognition:

- identifying own learning needs,
- formulating the research goals and objectives,
- identifying and getting the resources for research themselves,
- selecting and implementing the learning strategies and research methods,
- interpreting and analyzing the research findings,
- drawing logical and coherent conclusions,
- evaluating the learning outcomes,
- assessing their own work and activities.

Evaluation and self-evaluation of “learning-to-learn” metacompetency in ITC Program promotes the goals of lifelong learning, including higher levels of student achievement, greater equity of student outcomes, and improved “learning-to-learn” skills.

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