METHODS FOR ORGANIZING AND EVALUATING PROJECT ACTIVITIES BASED ON STEM EDUCATION AMONG FUTURE EDUCATORS

Nurullayeva Ugulxon Ergashboyevna
Teacher of the "Humanities and Pedagogy" department of
Turan International University
E-mail: nurullayeva_ugulxon@gmail.com

Abstract. *This article will consider methods for organizing and evaluating project activities based on STEM education among educators. The article provides information on the application of STEM education to students, the importance of project activities, and methods used in the effective organization and evaluation of project activities. Project-based education helps students develop creative and systematic thinking skills. Assessment methods, including criteria-based, self-assessment, and collaborative assessment approaches, are also analyzed. The article helps to understand the importance of STEM education in pedagogical practice and helps educators prepare students to effectively teach students through new methods.*

Keywords: *STEM education, pedagogical methods, project activities, pedagogy, assessment methods, creative thinking, systematic thinking, interactive learning, methodological approaches, self-assessment, collaborative assessment.*

Abstract. *V dannoy state rassmatrivayutsya metody organizatsii i otsenki ekteknoy deyatelnosti na osnove STEM-obrazovannya sredi budushchikh pedagogov. V state presents information on the application of STEM-education for flying, the meaning of project details, as well as the organization of methods and direct project details. Obrazovanie na osnove proektov sposobstvuet razvitiyu u uchashchikhsya navykov kreativnogo i sistemnogo mishleniya. Takje analiziruyutsya metody otsenki, vklyuchaya podkhody, osnovannye na kriteriyax, samootsenke i otsenke v sotrudnichestve. Statya pomogaet ponyat vajnost STEM-obrazovannya v pedagogicheskoy praktike i sposobstvuet podgotovke pedagogov k effektivnomu obucheniyu uchaschihsya s ispolzovaniem novykh metodov.*

Key words: *STEM-obrazovanie, pedagogicheskie metody, proektnaya deyatelnost, pedagogy, method otsenki, kreativnoe mishlenie, sistemnoe mishlenie, interaktivnoe obuchenie, methodicheskie podkhody, samootsenka, otsenka v sotrudnichestve.*

Annotation. *This article discusses methods for organizing and evaluating project activities based on STEM education among future educators. The article provides information on the application of STEM education to students, the importance of project activities, and the methods used for effective organization and assessment of these activities. Project-based learning helps students develop creative and systematic thinking skills. The article also analyzes various assessment methods, including criterion-based, self-assessment, and peer assessment approaches. This article helps in understanding the*

significance of STEM education in pedagogical practice and assists in preparing educators to provide effective teaching to students using new methods.

Keywords: *STEM education, pedagogical methods, project activities, pedagogy, assessment methods, creative thinking, systematic thinking, interactive learning, methodological approaches, self-assessment, peer assessment.*

Introduction. Methods of organizing and assessing project activities based on STEM education among future teachers not only help develop students' scientific and technological skills, but also help them form creative and systematic thinking skills in solving problems. This, in turn, is of great importance in preparing young people for the global labor market. Effective organization of STEM education and the correct selection of assessment methods help teachers provide high-quality education to students. This greatly contributes to the growth of this direction in education, and teaching effective project activities and assessment based on STEM education remains a pressing problem for future teachers. This in the article will be divided educators STEM education among based on project activity organization assessment and evaluation effective methods seeing is released .

STEM education importance of STEM education to students not only sciences to study , maybe them daily in life to apply help This education system students problems various roads with solution to do , projects through creative and systematic to think teaches . Will be educators STEM methodology for in learning and practice application , to students this knowledge effective to teach opportunity STEM education own inside innovative approaches , projects based on teaching , and society and technology between connections to study take Project activity this of the process basis is considered . Will be educators between project activity organization and provide students with STEM- based how successful project to create to teach important importance has . Project activity students independent work to do , creative approaches to apply , team with to work and communicate skills to develop help gives . Educators own experiences through this the process organization in the process of students certain to the goal achieve for effective plans to compose their motivations need .

Project activity organization of reaching effective methods :

1. Data study and analysis to do : Project activity from the beginning first , will be educators in STEM fields new trends to students , to learn the most relevant and interesting topics to choose help give necessary . Example for the environment protection to do or artificial intellect such as modern issues will be divided educators by discussion to be done possible .
2. Interactive Approach : Students activity increase and they with effective work for interactive from methods use necessary . For example , groups organization to them any project submission and results presented to reach to ask , to students mutual in cooperation work opportunity gives .

3. Education and technology integration : in STEM education from technologies use separately importance has . Will be educators to students computer programs , programming languages , robotics , 3D printing release such as technologies in practice to apply their teachings necessary .

4. New pedagogical Methods : Project based on education process organization in the process of will be divided educators new pedagogical methods applications " Problem -based " learning " (problems) based education) or " inquiry-based learning " (request) based on education) like methods students problems solution in doing independent to think teaches .

Project activity evaluation , not only students knowledge and skills , but also their creative approaches and collaboration work skills also to measure demand The project of activity every one stage for clear assessment criteria designation It is important . This criteria , students project to their goals in reaching how to the results achieved to determine help gives .

To the readers own works about idea to express and express oneself assessment opportunity create , their oneself analysis to do and improve aspirations encourages .

Methodology. The following methodological approaches were used in this article to study the methods of organizing and evaluating project activities based on STEM education among educators. STEM education , project based on education and assessment methods according to there is scientific literature and pedagogy research studied . Literature analysis to do of STEM education through main principles , its pedagogical in process role , project of activity importance and effectiveness assessment methods about in detail information collected . In the article project activity organization in the process of from a constructive (creative) approach used . This approach students own knowledge and skills reinforcement for projects to create , creative and analytical to think Also , the project based on activity through students collective work skills develop also in sight caught . To be shared educators STEM education among based on project activity organization assessment and evaluation according to practical experience and experts to their thoughts based on , effective approaches and methods working Experts and experienced educators with interviews was held , and their feedback and methodology approaches in the article reflection The project was activity in evaluation constructive analysis method This is method students the results only theoretical knowledge based on not , maybe practical skills and creativity approaches into account received without evaluation Interactive methods (e.g., group work, presentations, and experiments) were explored among prospective educators in teaching STEM education. These methods demonstrate how educators can use approaches to teach knowledge to students in an active and effective way .

Using this methodology, effective methods for organizing STEM education and project activities, as well as the necessary methodological guidelines for ensuring the accuracy and fairness of the assessment process, were developed. The article will help

future educators to apply these methodologies in practice. Also, the use of new methodological approaches in organizing and assessing STEM education for educators plays an important role in ensuring the effective participation of students in the educational process. The results of the study provide practical recommendations for future educators on how to teach STEM education in more effective and innovative ways. In general, the effective use of STEM education increases the opportunities for future educators to provide high-quality education to students and helps them to be provided with modern knowledge. This, in turn, is of great importance in preparing young people for the global labor market and an innovative society.

Conclusion. In this study, methods for organizing and evaluating project activities based on STEM education were studied among teachers. The results of the study show that STEM education not only develops students' scientific and technological skills, but also strengthens their creative thinking, problem-solving and collaborative skills. Project activities serve as an important tool for activating students and motivating them to master knowledge through practical work. The analysis and practical experiences carried out during the study showed that interactive methods, teamwork and the application of technologies are important for the effective organization of project activities based on STEM. In the evaluation of project activities, methods such as criteria-based, self-assessment and collaborative assessment allow for a fair assessment of students' knowledge and skills.

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