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THE IMPORTANCE OF SWOT ANALYSIS IN INCREASING THE EFFICIENCY OF STEM EDUCATION

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Abstract: This thesis examines the use of the SWOT analysis method in increasing the efficiency of STEM education. Modern educational technologies allow for the development of a person-oriented competency approach, which helps to form complex professional and meta-competences in students. The issue of developing critical analysis skills in physics lessons is considered as a key focus.

Keywords: STEM education, SWOT analysis, critical analysis, competence, project-based education.

Аннотация: В данной диссертации рассматривается применение метода SWOT-анализа для повышения эффективности STEM-образования. Современные образовательные технологии позволяют развивать личностно-ориентированный компетентностный подход, способствующий формированию комплексных профессиональных и метакомпетенций у учащихся. В качестве ключевого аспекта рассматривается вопрос развития навыков критического анализа на уроках физики.

Ключевые слова: STEM-образование, SWOT-анализ, критический анализ, компетентность, проектное образование.

Annotatsiya: Ushbu dissertatsiya STEM ta'limi samaradorligini oshirishda SWOT tahlil usulidan foydalanishni o'rganadi. Zamonaviy ta'lim texnologiyalari shaxsga yo'naltirilgan kompetensiya yondashuvini ishlab chiqish imkonini beradi, bu esa talabalarda murakkab professional va meta-kompetensiyalarni shakllantirishga yordam beradi. Fizika darslarida tanqidiy tahlil ko'nikmalarini rivojlantirish masalasi asosiy yo'nalish sifatida qaraladi.

Kalit so'zlar: STEM ta'limi, SWOT tahlili, tanqidiy tahlil, kompetensiya, loyihaga asoslangan ta'lim.

Introduction. Today, the rapid development of scientific and technical achievements and the acceleration of information exchange require the modernization of the education system. A person-oriented competency approach allows students to develop not only one or two competencies, but also general professional and meta-competences. Although the project-based learning (PBL) system is widely used, STEM education has been gaining importance since the beginning of the 21st century. In STEM education, students develop the following competencies: Creativity, Critical Thinking, Collaboration, and Communication. The development of these skills is a key tool for increasing efficiency in physics lessons.

Objective: To develop critical analysis skills in physics lessons in schools specializing in exact sciences and to develop STEM competencies through SWOT analysis.

Problem: The systematic formation of students' critical analysis skills in the educational process is not sufficiently implemented. Often, a quantitative result is obtained only by solving a problem, but the objects of the physical process, their capabilities, and cause-and-effect relationships are not deeply analyzed.

The study used quantitative and qualitative analysis, diagnostic and prognostic analysis methods. Quantitative analysis: seeks answers to the questions "how much" and "how fast". Qualitative analysis: answers the questions "why" and "how". Diagnostic and prognostic analysis allows you to model future events based on cause and effect. In the article, using the example of a balloon lift, students will develop the ability to analyze new laws of motion, taking into account the limitations and capabilities of the mechanism.

SWOT — Strengths, Weaknesses, Opportunities, Threats — helps students systematically evaluate a project or physical process. SWOT analysis in STEM:

- * Identifying the strengths and weaknesses of a created device or process;
- * Discovering untapped opportunities;
- * Developing a strategy for overcoming competitiveness and threats;
- * Developing critical analysis and decision-making skills.

This method develops students' ability to make scientifically based decisions, evaluate new technologies and devices, and apply them to practical life.

Conclusion

SWOT analysis develops students' skills in analyzing problems, identifying opportunities, and effectively using existing situations. This not only develops interdisciplinary integration and critical analysis, but also helps to put STEM competencies into practice. At the same time, analyzing the strengths, weaknesses, opportunities, and threats of products developed based on SWOT analysis forms systematic thinking in students.

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ENHANCING VOCABULARY ACQUISITION THROUGH MOBILE APPLICATIONS

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Annotation: Ushbu maqolada mobil ilovalar yordamida lug‘at boyligini oshirish masalasi nazariy jihatdan tahlil qilinadi. Zamonaviy texnologiyalar, ayniqsa mobil qurilmalar ta‘lim jarayoniga faol kirib kelib, til o‘rganishda muhim vositaga aylanmoqda. Tadqiqotda mobil ilovalar yordamida so‘z boyligini o‘rganishning samaradorligi, uning afzalliklari va o‘quvchilarning mustaqil ta‘lim olish jarayoniga ta‘siri ko‘rib chiqiladi. Shuningdek, mobil ilovalarning interaktivligi, takrorlash imkoniyati va motivatsiyani oshirishdagi roli yoritiladi. Nazariy manbalar asosida mobil texnologiyalar yordamida lug‘atni o‘rganish til o‘rganishda samarali metodlardan biri ekanligi asoslab beriladi.