

A Simulation Trainer's Educational Competence in the Process of Forming Students' Professional Competence

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Abstract: Students in higher education's applied mathematics program are instructed on the topic of "computer mathematical systems." The area of science has a variety of instructional guides, textbooks, and electronic textbooks. In this essay, we evaluate the pedagogical potential of the simulator in the process of developing students' professional competence in the teaching of "Computer Mathematical Systems."

Keywords: simulation simulator, mathematical systems, Mathcad, Maple, competence, professional competence, education, software-pedagogical tool, communication, professional activity, principle, knowledge, skill, method, tool.

We examine the problem of instructing applied mathematics students in higher education on "Computer mathematical systems" using a simulation simulator. Students' professional competence is being developed through the use of a simulator, which aims to improve their mathematical system-working abilities and ensure that they interact with other professionals as they work with mathematical systems' functions.

Using the simulator, the process of developing pupils' professional competence is carried out. The simulation simulator is a complete software and pedagogical tool that enables the solution of issues that emerge while working with mathematical systems that are particular to the area of applied mathematics. It is built on a system of information sources, supports, and methodological tasks. The simulator's primary purposes are control, advising, and diagnostics.

It is feasible to apply the features of working in mathematical systems with a professional focus successfully using the simulation simulator made available to pupils. As a result, it becomes feasible to enhance the professional competence developed by working with mathematical systems.

Teachers help students' mental models of professional abilities come to life by concentrating their attention on the mathematical systems' functions and teaching them how to use Mathcad and Maple.

Students' understanding across all subject areas is improved by the usage of the simulator in the instructional process. The most significant professional teaching direction's guiding principles, thinking activity principles, educational principles, learning by immersion in organizational activity principles, integrativeness principles, and functionality principles all allow for practical application.

All of this functions as an integral part of the process of developing students' professional competence through the usage of the simulator.

Students can experience common career-related situations using the simulator.

Based on a comparison of the Mathcad and Maple programs when used to solve common issues

in the area of applied mathematics, the simulation simulator offers a list of all the instruments that guarantee successful mastery of the unique properties of mathematical systems. Students can practice their professional abilities at the level of perception using the simulation simulator. Students' brains are continually mirrored with the functions and instructions of mathematical systems while they work to improve their professional abilities using a simulation simulator.

The simulator's ability to serve as a learning tool is primarily illustrated through a comparison of the Mathcad and Maple programming languages.

Using Mathcad and Maple functions and instructions, which serve as the foundation for dealing with mathematical systems in particular circumstances in the field of applied mathematics, you are able to execute multidimensional analysis with efficiency. It is important to note that this utilizes the concept of organizational and communicative tools.

The simulation simulator assists students in developing their professional competence and in mastering the socio-cultural component of communication that is professional in nature in the field of applied mathematics. No matter what line of work they are in, everyone needs this.

Therefore, the educational potential of the simulation simulator is ensured in the process of developing students' professional competence in the field of applied mathematics through the use of the simulation simulator by the implementation of the functional transfer mechanism based on the comparison of the Mathcad and Maple programs. The abilities of working in mathematical systems that are typical of the most significant professional circumstances of applied mathematics professionals are initially taken into consideration in this procedure.

The qualification criteria of the educational direction of applied mathematics, state educational standards, and the scientific curriculum of the topic "Computer Mathematical Systems" served as the foundation for the building of the simulation simulator.

Additionally, examinations and exercises on using the Mathcad and Maple programs, as well as concise information for answering questions, served as the foundation for the development of this software and pedagogical tool.

The development of the students' professional competence in the field of applied mathematics is given special consideration in this software-pedagogical tool based on the usage of the simulation simulator throughout the process of working with mathematical systems.

The simulation simulator offers instruction in using mathematical systems resembling the tasks performed by professionals in the field of applied mathematics while tackling typical business challenges. The simulator performs diagnostic, monitoring, and consulting tasks, it should be highlighted. This teaching-methodological instrument offers the educational process flexibility, openness, ease, individualization, awareness, and visibility. The diagnostic function assesses students' knowledge, proficiency, and experience with mathematical systems, as well as the organization and communication style of the teacher's interactions with the students. You can ascertain the professional element of dealing with mathematical systems using this teaching-methodological tool. Depending on the students' level of understanding, the exercises in the simulation simulator are designed in varying degrees of complexity. This guarantees that each student's preparation is unique. Every level of using the simulator is experienced by every student.

A system of theoretical references related to the process of removing errors that may occur during the execution of tasks of various levels of complexity when using the simulator is included in the simulator's set of educational and methodological tools, which also includes tasks. also comprises.

The simulator's management role is demonstrated by the activation of the student's effort to grasp the course material. It is appropriate to incorporate guidance in the form of leading questions and suggestions that not only guarantee the learning of the essential information and abilities but also aid students in developing the key cognitive processes and trainer talents. This is required for

students to develop their professional competence in the area of applied mathematics. It should be mentioned that based on their educational needs, each student has the option to retry an assignment, complete a collection of similar activities, or complete assignments of a certain level of complexity.

In light of the organizational knowledge, skills, techniques, tools, and experiences needed by the expert, the simulation simulator aids in the formation of students' professional competence in the field of applied mathematics.

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