INTUITIVE PROOFS AS A TOOL FOR DEVELOPMENT OF STUDENT'S CREATIVE ABILITIES WHILE SOLVING AND PROVING

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Nowadays development of the skills of students' mathematical thinking is extremely important didactical requirement as well as one hundred years ago (Gusev and Safuanov, 2000). At the same time students' mathematical thinking on their own in learning mathematicsis impossible without intuition. There are many different views about the role of intuition in teaching and learning mathematics (Steklov, 1923, Piaget, 1966, Fischbein, 1987) or, in particular, in geometry (Fujita and Jones, 2002), and combinatorial problems (Fischbein, 1997). In the typology of proofs (Yevdokimov, 2003) intuitive proofs are distinguished in a separate item, where the simplest creative action of a student is necessary element of that proofs. As an example, consider an application of Pythagorean theorem (or any other) by a student in the context of intuitive proof. The question is: where, when, for what of triangles a student will apply the theorem for proving and whether it is necessary to apply the theorem generally in that case. As an *Active Fund of Knowledge of a Student* (AFKS) in the given area of mathematics we call student's understanding of definitions and properties for some mathematical objects of that domain and skills to use that knowledge. After having some level of AFKS a student has to solve the next unknown problem of that domain. A question arises: in what level of AFKS probability of display of student's creative abilities will take the greatest value. On the one hand, if a level of AFKS becomes greater, then possibilities to apply student's own knowledge increase. On the other hand, a significant level of AFKS may constitute obstacles to developing creative abilities because knowledge of many methods of proof can stimulate student's actions with using analogy only, for example. However, if a level of AFKS increases by realization of intuitive proofs, made by a student, then probability of display of student's creative abilities will increase infinitely, but will be bounded, of course.

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