THE ESSENCE AND STRUCTURE OF VISUAL AND INFORMATION CULTURE OF WOULD-BE MATHEMATICS AND COMPUTER SCIENCE TEACHERS

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The development of information technologies, the widespread use of Internet content have led to a situation where the skills of working with visual materials are becoming more popular and make a necessary component of education in the XXI century. The would-be teacher, operating with visual images, must form the younger generation's skills to evaluate critically, interpret and summarize information, i.e. must have a high level of visual and information culture. This problem is in focus for the preparation of would-be mathematics and computer science teachers, because their activities are designed to form students' information picture of the world, scientifically competently and quickly to convey basic ideas and form fundamental ideas about the world and its laws under conditions of the intensification of the educational process. The nature of the phenomenon of "visual and information culture" is dualistic. It is a synthesis of two phenomena – visual culture and information culture. Analysis of the essence of the concepts "visual culture" and "information culture" allowed revealing the essence of the phenomenon "visual and information culture of would-be mathematics and computer science teachers". The visual and information culture of would-be mathematics and computer science teachers is the integrative quality of personality, which combines values, aspirations for development in the field of visualization and informatization of education; computer and mathematical, psychological and pedagogical, technological knowledge; ability to perceive, analyze, compare, interpret, produce with the use of information technology, structure, integrate, evaluate visually presented educational material; ability to analyze, predict and reflect on their own professional activities in the visualization of educational material using computer visualization means, which provides professional self-development and self-improvement. So, it should include various components, among which we distinguish the following: professional-motivational, cognitive, operational-activity, and reflexive. The content of each of these components and the mechanism of their formation is developed both individually and in teams. The cognitive component is characterized by developed visual thinking, which we see in the ability to transform various problem situations in the structure of new knowledge, in the creation of cognitive structures in which information is presented by creating models, schemes and more. The operational component is also characterized by a communicative aspect: the ability to transmit educational information by visual means, on the one hand, and the ability to perceive and understand educational information presented visually, on the other. The components are characterized in full and quite widely, which makes it difficult to determine the levels of their formation. This determines the prospects for further exploration, which is to find criteria for determining the levels of formation of visual and information culture of pre-service mathematics and computer science teachers.

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