

Study of Objectivity, Reliability and Validity of Pedagogical Diagnostic Parameters Introduced in the Framework of a Specific Research

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Abstract : The challenges modern education faces undoubtedly require reforms and innovations aimed at the reconceptualization of existing educational strategies, the introduction of new concepts and novel techniques and technologies related to the recasting of the aims of education and the remodeling of the content and methodology of education which would guarantee the streamlining of our education with basic European values. Aim: The aim of the current research is the development of a didactic technology for the assessment of the applicability and efficacy of game techniques in pedagogic practice calibrated to specific content and the age specificity of learners, as well as for evaluating the efficacy of such approaches for the facilitation of the acquisition of biological knowledge at a higher theoretical level. Results: In this research, we examine the objectivity, reliability and validity of two newly introduced diagnostic parameters for assessing the durability of the acquired knowledge. A pedagogic experiment has been carried out targeting the verification of the hypothesis that the introduction of game techniques in biological education leads to an increase in the quantity, quality and durability of the knowledge acquired by students. For the purposes of monitoring the effect of the application of the pedagogical technique employing game methodology on the durability of the acquired knowledge a test-base examination has been applied to students from a control group (CG) and students form an experimental group on the same content after a six-month period. The analysis is based on: 1.A study of the statistical significance of the differences of the tests for the CG and the EG, applied after a six-month period, which however is not indicative of the presence or absence of a marked effect from the applied pedagogic technique in cases when the entry levels of the two groups are different. 2.For a more reliable comparison, independently from the entry level of each group, another "indicator of efficacy of game techniques for the durability of knowledge" which has been used for the assessment of the achievement results and durability of this methodology of education. The monitoring of the studied parameters in their dynamic unfolding in different age groups of learners unquestionably reveals a positive effect of the introduction of game techniques in education in respect of durability and permanence of acquired knowledge. Methods: In the current research the following battery of methods and techniques of research for diagnostics has been employed: theoretical analysis and synthesis; an actual pedagogical experiment; questionnaire; didactic testing and mathematical and statistical methods. The data obtained have been used for the qualitative and quantitative of the results which reflect the efficacy of the applied methodology. Conclusion: The didactic model of the parameters researched in the framework of a specific study of pedagogic diagnostics is based on a general, interdisciplinary approach. Enhanced durability of the acquired knowledge proves the transition of that knowledge from short-term memory storage into long-term memory of pupils and students, which justifies the conclusion that didactic plays have beneficial effects for the betterment of learners' cognitive skills. The innovations in teaching enhance the motivation, creativity and independent cognitive activity in the process of acquiring the material thought. The innovative methods allow for untraditional means for assessing the level of knowledge acquisition. This makes possible the timely discovery of knowledge gaps and the introduction of compensatory techniques, which in turn leads to deeper and more durable acquisition of knowledge.

Keywords : objectivity, reliability and validity of pedagogical diagnostic parameters introduced in the framework of a specific research

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