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Monitoring and Evaluation Component of Test Control System in Physical Education of Students with Chronic Health Conditions

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Abstract

Ensuring the effectiveness of physical education of students with chronic health conditions is possible only if proper test control system is available. Taking into account the importance of the conclusions that are made in accordance with its results, the questions of objective assessment and correct interpretation of monitoring results acquire a special urgency. Purpose. Theoretical modeling of the monitoring and evaluation component of test control in physical education of students with chronic health conditions. To achieve the goal such methods are used: analysis and synthesis, systematization and generalization of research results of ascertaining and forming stages of the experiment, the theoretical modeling. Results. The principal provisions of the developed model of monitoring and evaluation component of the test of students with chronic health conditions are presented. The practical implementation of the proposed assessment technology provides personal approach in assessing and objectivity of information processing. Novelty and innovation of represented monitoring and evaluation component are based on the integral assessment. At the same time, it provides maximum weighty and detailed information about the individual dynamics of parameters of students' psychophysical condition under the influence of physical education.

Keywords: testing, control, assessment, monitoring, model, result, technology.

1. Introduction

Taking into account the annual increase in the number of students with chronic health conditions which are directed to special groups for physical training classes because of their health status, the state of modern physical and recreation activities in universities is the subject of close attention (Konkabaeva, et al., 2016; Ruscitti, et al., 2017). The majority of field scientists share opinions on the ways of effective implementation of the target direction of students with chronic health conditions in physical education. Experts assert that this requires an effective system of control (Bondarevskiy, 1983). The perspective direction to increase the effectiveness of physical education is development and practical implementation of new high technologies of test control (Alfrey, et al., 2014; Koryahin, et al., 2017). Students with chronic health conditions warrant specific recognition and access to educational resources including within the field of test control in physical education defined in scientific works (Baghurst, et al., 2014; Di Tore, et al., 2016).

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2. Reviews of related literature

The leading field experts emphasize the uniqueness of students with chronic health conditions control in physical education (American College of Sports Medicine, 2010; Blagush, 1992; Fanelli et al., 2007). Today there is a considerable amount of theoretical empirical material on the control in physical education (Godik, 1988). However, aspects of the of students with chronic health conditions test control are almost out of scientists' view. Discussion of the test monitoring of students with health deviation is very limited in modern native literature.

The urgency of the study is determined by the need to find the ways to increase the effectiveness of physical education, which implies the necessity of more accurate regulation of the order and the organization of the control of this process in the educational institutions (Keating et al., 2009).

Thus the analysis of the scientific heritage on the proposed theme indicates the necessity to study, systematize, justify and research further in order to generate evidence-based technology of processing the test monitoring results of students with chronic health conditions in the process of their physical education.

3. Methods and organization of the research

General Background of Research. A theoretical modeling of monitoring and evaluation component of the test control in physical education of students with chronic health conditions. The object of the research is the control in the physical education of students with chronic health conditions.

Instrument and Procedures. To achieve the assigned tasks the following research methods were used: general scientific methods of theoretical level: analysis and synthesis, systematization and generalization of research results in the ascertaining and the formative stages of experiment, theoretical modeling (Bogdan, et al., 1982; Cohen, et al., 2007; Zatsiorskiy, 2006).

Type of the Research. This research is theoretical qualitative research. The type of this research is descriptive modeling research.

4. Results

The general hypothesis of the study is based on the assumption that the qualitative control in the physical education of students students with chronic health conditions, as a major factor in the formation of the competent management decisions, is the basis for improving the efficiency of physical education.

The final testing stage is an educational evaluation of test measurements results (Koryahin et al., 2013). Evaluation is considered to be a key influence factor in education as a whole (Alfrey et al., 2014; Baghurst, et al., 2014).

According to the estimation theory (Zhu, 1998) assessment in physical education consists of several stages. At first, one chooses a scale, which can be used to convert the test results into evaluation marks. Further, in accordance with the selected scale test results are converted into points. And finally, the points obtained are compared with the standards (Godik, 1988).

However, according to the data of empirical research (Mercier et al., 2013; Baghurst et al, 2015), current tests used in the practice of students with chronic health conditions physical education ignore the specific characteristics of these students.

In our study, the monitoring and evaluation component is a local stage of practical implementation of the test control technology. Monitoring and evaluation component performs diagnostic and evaluative function of test control. These functions require systematic analysis of physical education results. Its task is to get objective and reliable information about this process. This allows to make adjustments not only in the educational process, but also in monitoring and evaluation system.

Monitoring and evaluation component of the test control technology is presented as a interrelated complex of formulated basic regulations and organizational and methodological conditions for its effective implementation. At the heart of the development is a systematic diagnostic approach. It provides for objectives, principles and objective criteria of evaluation to eliminate subjectivity in the analysis of the of physical education results.

The developed model of technology assessment of test monitoring results in special medical groups is based on the necessity to improve the content of normative provision control (Figure 1).

It is designed as a semantic model of procedures. These procedures integrate organically organizational and technological mechanisms of information processing. In fact, it is an ordered complex of operations on the formation of its results. The latter reflect the results of physical education for the period of students stay in the educational establishment. This is the way to ensure obtaining a reliable empirical evidence for the formation of an "information base "and its further processing.

The basic provision of the theory of control results (Godik, 1988; Zatsiorskiy, 2006; Zhu, 1998) assessment have become the methodological basis of the model. In accordance with them, the assessment should be systematic, objective, reliable and differentiated. The main idea of assessment model is supported and specified by key provisions of test control concept. The exact implementation of these provisions ensures the accuracy of the assessment of the monitoring results.

The idea of the proposed model is based on the formation of mechanisms of obtaining information on the individual dynamics of the parameters of students with chronic health conditions test monitoring during their physical education. The function of the monitoring and evaluation component is processing and analysis of test control data.

Formation of the monitoring and evaluation component of test control of students with health deviation requires a compliance with a number of principles. As a general action-guiding norms it is theoretical provisions of the substantive nature of the assessment. The principles reflect the general requirements for the content, organization and methods of this process and determine its direction.

Consistent compliance and account of certain principles ensure a purposeful functioning of the monitoring and evaluation component of test control. Among them:

1) a principle of scientific content; it provides for an assessment from the standpoint of the tests and evaluation theory;

2) a principle of comprehensiveness; it anticipates that the assessment must be comprehensive;

3) a principle of adequacy; it implements person-oriented evaluation;

4) a principle of the information content; it anticipates that the evaluation must provide for a maximum of information;

5) a principle of impartiality (objectivity), this principle provides for obtaining reliable informative results of the test control.

Organizational and methodical conditions of effective functioning of the monitoring and evaluation component of test control are defined. The conditions are presented as a set of measures, the implementation of which ensures the formation of operational and technical aspects of assessment. Among them:

1) an individually differentiated approach;

2) a person-oriented approach;

3) an integrated approach to the assessment of the test parameters;

4) transformation of assessment in accordance with a level of the body functional ability providing for the correction of difficulty level.

Implementation of a person-oriented approach required science and practice reference to the activity aspects of innovative, personalized and differentiated assessment. The solution of this problem consisted in the identification of priorities in the choice of methods and means for individualization of the assessment. These are essential conditions defined by the concept of control humanization (Bondarevskiy, 1983; Zatsiorskiy, 2006).

Assessment technology of the test control results in special medical groups is designed so that to ensure objectivity of results, processing efficiency and impact effect assessment with minimal time. It allows to determine the most fully the quality of parameters under test. This will contribute to the effective functioning of the test control as a whole.

Practical implementation means of the monitoring and evaluation component of test control are didactic materials for the controlled process implementation.

The results of each student test monitoring are systematized in the form of protocol and submitted in the form of integrative index. This index determines the degree of development of the studied parameters in figures. The final quality assessment is set according to the integrative index.

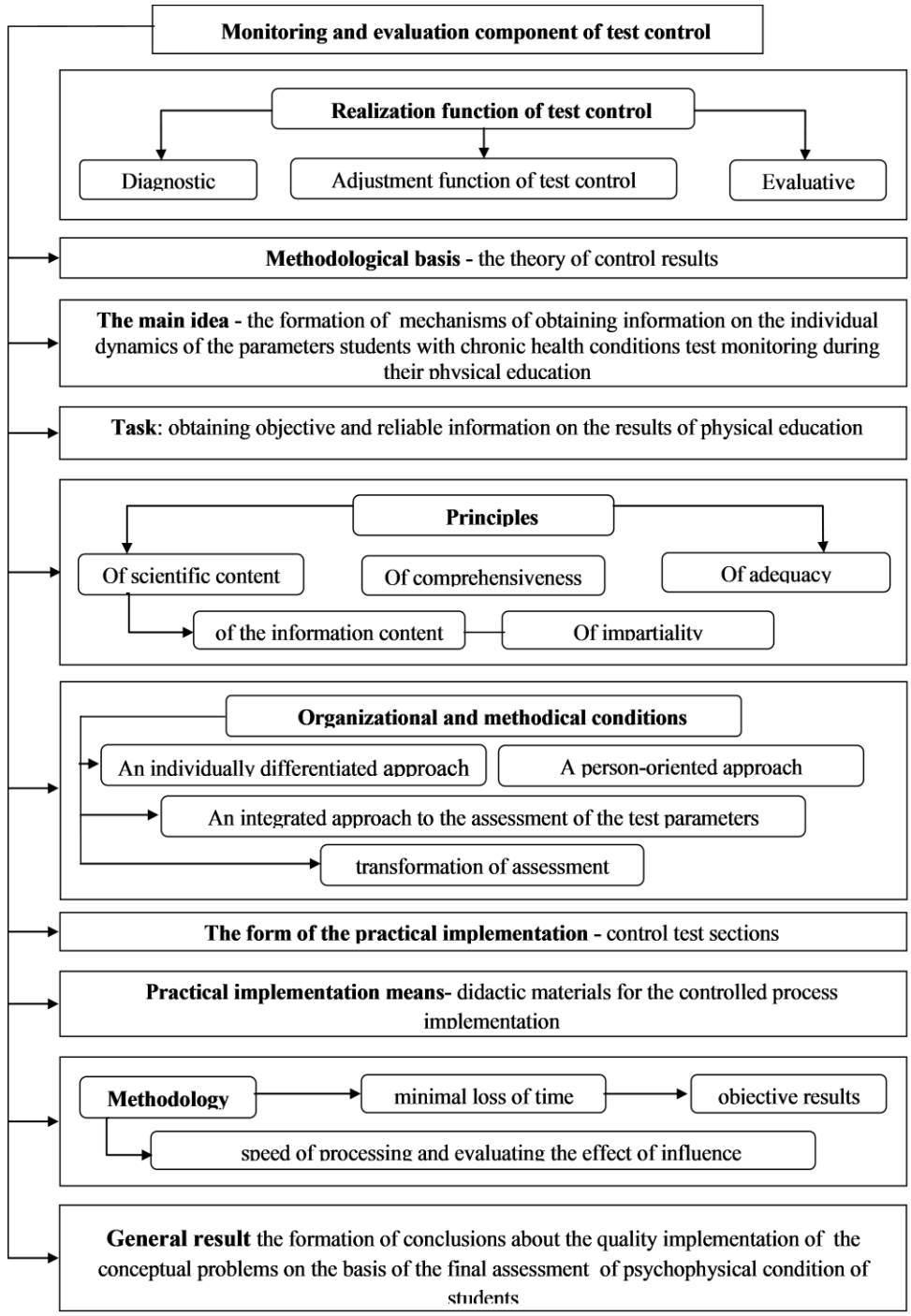

Fig. 1. Flow-chart model of monitoring and evaluation component of test control system in physical education of students with chronic health conditions

Regulation of methodology issues of the monitoring and evaluation component of test control can be described as an ordered set of operations directed at generation of its results. These very results reflect the physical education results for the period of students stay in the educational establishment. The general result of its implementation is the formation of conclusions about the quality implementation of the conceptual problems on the basis of the final assessment (integrative index) of psychophysical condition of students.

5. Discussion

Educational assessment of test measurement results of students with chronic health conditions is a leader in ensuring the effectiveness of the physical education (Aiman, Konkabaeva et al., 2016; Ayers, 2004). Assessment is the basis of governance in this process and the factor, which provides performance of control functions. We fully support the scientific approaches of specialists engaged in finding the ways of optimization of physical education results (Alfrey et al., 2014; Baghurst et al., 2015; Dalen et al., 2017; Geoffrey et al., 2012; Keating et al., 2009).

Construction of assessment technology of test control results on the diagnostic basis assumes presence of objectives and control principles as well as objective criteria and quality assessment indicators of physical education to eliminate subjectivity in the analysis of results. The results of our study confirmed the existing points of view on this issue (Baghurst et al., 2014; Silverman et al., 2008; Zhu, 1998). It is believed that the evaluation system is mostly focused on the implementation of the assessment function only. Therefore it is not properly taken into account the diagnostic and corrective functions though the highest probability of comprehensive integrated assessment implementation exists in case of system diagnostic approach (Zatsiorskiy, 2006; Baghurst et al., 2004).

The model of the monitoring and evaluation component of test control of students with chronic health conditions was introduced for the first time. Its defining feature is clear systematic approach to the evaluation process and the flexibility of the model. Consequently students are able to determine the pace of their individual progress in the improvement of psychophysical condition. The principal difference of the proposed evaluation system consists in the fact that the goal is not result in subject but personal one.

6. Conclusion

The objective analysis of the test study results provides specific data for operational management of physical education process of students with chronic health conditions. Conceptual framework of test control system of students with chronic health conditions have become the preconditions for quality assessment issue solution. Basic provisions of the theory of control results assessment are the methodological basis of the model. System-diagnostic approach, didactic principles and pedagogical conditions are put into the basis of the development.

The result of the study was the creation of a model of the monitoring and evaluation component of test control of students with chronic health conditions physical education. It is presented as a system of means. The latest adequately reflect current and interim results of physical education of students with health deviation. The main characteristic of the model is the objectivity of the information processing regarding the changes in psychophysical condition of students with chronic health conditions. The systematic assessment of the final results and the formation of the final judgments as well as the efficiency of statistical and analytical information collection are also the basis of the final expert conclusions and judgments on its effectiveness and identification of factors of possible deviations from the plans.

Didactic model of the monitoring and evaluation component of test control is presented as an integrated assessment technology of results of students with chronic health conditions physical education. The main vector of innovation is implementation of forms and methods of personal approach in the assessment. It provides for the use of objective diagnostic criteria: morphofunctional state of the body of students with chronic health conditions, their age features and entry-level of psychophysiological state.

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