

ABSTRACTS

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METHODOLOGICAL FRAMEWORK FOR ASSESSMENT OF THE VOLUME OF TEACHING AND LEARNING IN BASIC AND COMPLETE HIGHER EDUCATION

The authors propose a method for determining probability-based planned volume of teaching and learning in humanitarian and technical basic and complete higher education under random uncertainties and intersection of hypotheses on the actual distribution of volume that is expected at the planning stage. The results were obtained using the stochastic modeling and contribute to the enhancement of teaching and learning in the region or in the country as a whole.

Effective teaching and learning in basic and complete higher education suffers not only from traditional divergence between planned and real outcomes, first of all due to existing systematic inconsistency between available and necessary resources, but also due to inefficient project management under random or antagonistic uncertainties. Teaching and learning using existing resources, opportunities and finance pursues the following objectives: planning of the volume of teaching and learning in different courses and levels; material and technical support; proper organization; sound resource allocation; control over targeted use of resources; timely assembly of embedded resources; scientifically based forecasting of planned decisions. The latest objective is a subject of research in this paper.

Accuracy of forecasting of each observed variant is calculated through measurement of the probability of making right decisions and errors in decision-making when considering planned volume of teaching and learning. The probability of erroneous forecast in each variant is calculated through summing probabilities of errors in the rows in the confusion matrix.

Accuracy estimation on actual distribution of the volume of teaching and learning under conditions of uncertainty is particularly relevant when an intersection of hypotheses takes place.

The methods based on statistical hypothesis testing and stochastic modeling to forecast teaching and learning under random uncertainty, provide fairly reliable information even in terms of pair-wise in discern ability of desired learning outcomes in competitive environment. An important requirement is distinctiveness of each variant of investment by at least one of its distinctive features (volume of teaching and learning in competitive environment).

Using proposed methods to develop and use various software can greatly simplify necessary calculations and save time in addressing such issues. As a result, this will enhance teaching and learning in the region and in the country as a whole.

Key words: the volume of teaching and learning, the statistical hypothesis testing, forecasting using stochastic models, accuracy of distribution of volume at the planning stage.