

Features of the use of mathematical statistical methods in the process of pedagogical research

Tosmathova Ormonoy Rakhimovna

Senior Lecturer of the Department of Primary Education of Kokand State Pedagogical Institute

ABSTRACT

The article activates the problem of the necessary application of mathematical statistical methods in a broad sense in the practical part of pedagogical research activities. Accordingly, it is necessary to determine the role and importance of mathematical statistics in pedagogical research, and on this basis it is necessary to organize the methodology of using mathematical statistics, as increasing the quality and practical significance of pedagogical research results, increasing the requirements for pedagogical research as a basis for the problems of finding statistical methods that meet these requirements are described in detail.

Keywords : Pedagogical research, statistics, mathematical statistics, legislation, methodology, pedagogy

Introduction

National Training Program “State policy in the field of education to help change the direction, education and science in the development of society to strengthen public awareness that it is a key factor. as a priority area of “scientific research in the educational process, integration of educational institutions with scientific organizations ” defines Bubilan directs pedagogical staff to scientific activity. The National Training Program is pedagogical in the activities of researchers Mathematics in the processing of information that occurs in experiments research involving the application of statistical methods use of technology as one of the

urgent tasks put. Random nature of pedagogical events and processes, as well as taking into account the multifactorial nature of the pedagogical environment based on the results of research conducted by mathematical statistical methods provides quality conclusions. Since the second half of the twentieth century, due to the development of the information environment, the problems of global application of mathematical statistical methods in the processing and analysis of results have intensified. Also, in the practical part of the pedagogical research activity, the problem of the necessary application of mathematical statistical methods in a broad sense was activated.

Main part

Accordingly, it is necessary to define the role and importance of mathematical statistics in pedagogical research, and on this basis it is necessary to organize the methodology of using mathematical statistics, as it increases the quality and practical significance of pedagogical research results, increasing the requirements for pedagogical research. and finding statistical methods that meet these requirements. Statistics in the process of conducting pedagogical research analysis of features and problems of application of methods, identifying their role and place allows to develop a methodology for the application of statistical methods in pedagogical research on the basis of the following objectives: to expand the informatization of results by identifying and confirming real trends; obtained by means of representativeness of experimental data enhancing

the visibility of results; restore them increase the level of accuracy of the results by means of proof. The pedagogical experiment model includes experimental and control groups is built on the basis of comparison. Compared with the control group the result of the experiment is visible in the change in the experimental group. Such a comparison is applied in different variants in experimental practice. Experimental and control groups using statistical procedures were found to have differences. From scratch and next in the experiment

The data obtained are compared, or from an experimental study compared at the end. If the researcher does not have two groups, then compare data before and after the experiment as usual will be possible. For example, the teacher introduced a new methodology in 4th grade math has been applying the subject in teaching and received final results at the end of the year. Comparing the results with the results of previous years, makes a general comparison, i.e. a change. The pre-experiment phase has been previously published on this topic in-depth theoretical work; identify unresolved issues; this selection of research topic; setting goals and objectives of the research; study the real practice of solving this problem; solve the problem study existing measures in supportive theory and practice; research involves the expression of a hypothesis. He innovated through experimentation, it must prove that it is not ordinary, that it contradicts existing ideas. Between the observational results and the theoretically expected result the difference may vary. Statistical evaluation as evidence of this as a result, this or that hypothesis can be accepted with a certain probability, that is, if this difference is large, the hypothesis is not accepted, otherwise it is accepted it is done, of course, to accept the hypothesis to what extent this difference is the

possibility will depend on the nature of the issue. The department of mathematical statistics that deals with solving this problem called the theory of statistical hypotheses.

The statistical hypothesis is that we check on the available data is an assumption about the desired random size or event. Examples of statistical hypotheses in pedagogical research: Hypothesis 1. Student mastery is stochastic to their level of knowledge (probably) dependent. Hypothesis 2. Mathematics in students who started reading at the age of 6 or 7 years there is no significant difference in occupying the starting course. The zero hypothesis is the main test hypothesis that there is no difference, the absence of factor influence, the absence of effect, the equivalence of the values of the sample characteristic to zero, and so on. Control obtained in two groups as an example of the zero hypothesis in pedagogy said that the difference in the outcome of the case was due to accidental reasons confirmation can be obtained. Another test hypothesis is called a competitive or alternative hypothesis. For example, H_1 is an alternative to the H_0 hypothesis above the hypothesis can be obtained: the level of work done in both groups of students is different and this difference is determined by the influence of non-random factors, this or that teaching methods. So the preconceived hypothesis can be right or wrong it will be necessary to check it. If this check is statistical when performed by methods, such a check is called statistical. The next task of statistical analysis is to identify the main selection characteristics and make an analysis of a single sample a co-analysis of multiple choices that can be solved after is calculated. It is important that the two selections occur in the analysis process the question is whether there is a difference between these selections. This is normal statistical analyzes

are checked, not from a single combination whether or not the average is equal.

Given a distribution view or distribution function of the selection if so, the difference between the two groups of unrelated observations the evaluation problem used the parametric criteria of the statistics is solved if: if the comparison of the samples (X and U) is the middle of the s Student (t) criterion, or, if carried out on the values of if the comparison of the samples is carried out on their variance if performed, the Fisher (F) criterion. Preview the distribution view from the parametric criteria of the statistics without verification use was unexpected in the process of testing the working hypothesis can cause errors. The difficulties shown in the practice of pedagogical research To eliminate, from non-parametric criteria of statistics will need to be used. These are the criteria of the characters, Vikocson two-choice criterion, Van der Varden criterion, Spearman criterion. Their choice is based on a large number of knowledge and selection, although the distribution does not require a view, it depends on certain conditions. Non-parametric criteria of statistics - the distribution of the sample is based on the assumption that the law is independent and that the observations are independent. To the group of parametric criteria of mathematical statistical methods calculation of statistical expressions, graphs of normalities of distributions construction includes methods to test the hypothesis that two choices belong to one combination. These methods are based on the assumption that the samples obey the normal law of distribution (Gauss).

References

1. Khusainov Ya.M., Jalilov A.A., Muzrapov S.A. .. Mathematician
Methodical manual on solving problems from statistics. I. Selective method.-
Samarkand: SamSU edition, 2007. 40 pages.
2. Sh.Q. Farmonov, R.M. Turgunbaev, L.D. Sharipova, N.T. Parpieva
Probability theory and mathematical statistics:
Tashkent-2007, 115 pages
3. Sidorenko E.V. Methods of mathematical processing in psychology.
St. Petersburg. Rech, 2002, p.211