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# **CREATIVE CORE WITHIN THE SCIENTIFIC RESEARCH OF EDUCATIONAL PROBLEMS**

**Abstract.** The authors continue to explore the issue of practical methodology of research studies (Education and Science № 8, 2014). The aim of the study is to reveal theoretical and practical issues of empirical-research activity at the stages of conceptual problem understanding of pedagogical research, ideas promotion, development of the conception of their practical implementation and formation of scientifically grounded constructive hypotheses.

**Methods.** The applied methods include theoretical analysis, synthesis, abstraction, idealization, generalization, specification, comparison, classification, extrapolation, modelling and hermeneutic interpretation.

**Results.** Scientifically grounded description of the process of creative research of educational problems is presented in the paper. The content of such notions as «concept», «creative core», «idea», «plot», and «research hypothesis» is revealed. The creative core of scientific research is considered in close relation to the key aspects of the scientific inquiry: problematics definition, research topic and subject selection, clarification of initial facts and theoretical statements, definition of the conceptual framework, determination of essential novelty. The authors explore the mechanisms of the scientific research through the analysis of the educational situation and initial facts to the formation of a conceptual framework of research and the further working out of its instrumental component. The creative core of research is characterised as its most difficult element including the inception of idea transformation, its realisation into some conception and expansion into productive hypothesis. The authors describe the types of hypotheses, such as working and scientific (ready), functional and explanatory. The logical and gnoseological structure of a scientific hypothesis is shown in the study. The methodological requirements to the formulation of the scientific hypotheses are described. The probable logic errors of the are characterized. It is given the samples of fundamentally new scientific and pedagogical hypotheses suggested by well-known Russian scientist during the last decades and which have proved its constructive-modified possibilities. The specific examples of failed hypothesis-generating attempts of newcomer researchers are mentioned.

**Scientific novelty.** The authors point out the mechanisms of complicated and understudied process of hypothesis-generating, – the hypothesis formation due to mental abilities of a researcher. Complementarity of algorithmic and creative basis of the research activity, projective and reflexive character of scientific

and pedagogical search integration are emphasized. Additionally, the authors arrange the common methodological mistakes made by researchers during the process of developing the working hypotheses.

*Practical significance.* The research findings can help researchers, students, postgraduate students and candidates for a doctor's degree who master practical methodology scientific and pedagogical search to acquire the specific methods of hypothesizing, its verification and testing. It also can be useful to research advisors in order to enhance the creative strategy and constructiveness under their scientific supervision.

**Keywords:** scientific pedagogical research, creative core of a research, conception, idea, plot, hypothesis, hypothesis-generating (hypothesizing).

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