



Didactic Foundations For Developing Students' Creative Thinking In The Process Of Educational Research

Sabirov Zarifboy Raximbergan o'g'li
Ma'mun University, Uzbekistan

ABSTRACT

This article analyzes the issue of developing students' creative thinking during the course of learning research from a didactic perspective. The aspects of a learning investigation that distinguish it from simple knowledge acquisition activities are highlighted, as is the student's participation in the process of independently understanding the problem, asking questions, formulating hypotheses, searching for various solutions, comparing results, and drawing conclusions.

KEYWORDS: Learning research, creative thinking, problem situation, hypothesis, didactic.

INTRODUCTION

In today's educational process, the question of what a student knows is becoming increasingly important, as is how they acquire knowledge, how they use it, and how they make decisions in new situations. This is because the modern school demands an active student who is not limited to merely memorizing ready-made rules, but who can ask questions, identify problems, compare different ideas, and justify their own perspective. In particular, during the process of participating in a learning investigation, students internalize its content by practically engaging in mathematical and creative activities. Learning investigations provide a unique foundation for students to think actively. In such a situation, it is important not only what students learn, but also how they learn it. Learning research not only shapes and develops students' thinking but also serves to form creative thinking, the highest form of thinking necessary for creative activity.

N.N. Narzieva, A.T. Jumaev, M.A. Kuchkarov, X.M. Tadjiev, L.M. Qaraxonova, J.J. Soyipov, N.Sh. Buranova, I.A. Zimnyaya, N.L. Goloviznina, Ye.A. Shashenkova, V.V. Uspenskiy and other scholars interpret research skills as the result and criterion of research activity, i.e., as the ability to conduct independent observations and experiments that are formed in the process of performing various research tasks.

V.S. Lazarev introduced the following basic actions for solving research tasks:

- formulating research tasks;
- planning the solution of the tasks;
- formulating hypotheses;
- developing measurable quantities and measurement scales;
- collecting preliminary data;
- conducting an experiment;
- analyzing and summarizing data from experiments or observations;
- creating and working with models of reality.

The sum of these skills constitutes the stages characteristic of the experimental method of research. Experts have included the following among the tasks associated with organizing the educational process to ensure the development of students' research activities:

- providing pedagogical guidance in forming the drive and motivation for learning;
- Fostering interest in the subject being studied;
- Equipping students with the necessary methods for cognitive activity;
- Regularly implementing the principle of individualization in the educational process;
- Extensive use of technical and visual educational aids;
- implementing digital technologies in practice and using them systematically;
- developing creative assignments that require the independent search for non-standard solutions and information sources;
- The integration of didactically and methodologically sound methods that serve to develop students' cognitive activity and creative abilities.

Students' research activities can be organized based on materials from any academic subject in the school curriculum. One of the methods for engaging students in research activities is to organize educational research. Educational research is a creative work carried out based on a scientifically sound methodology. Using this methodology, the student obtains their own experimental material, and on that basis, an analysis of the properties of the phenomenon under investigation is conducted and sound conclusions are drawn. Learning research serves to ensure that students independently solve cognitive problems by creatively applying existing knowledge. The main characteristics of learning research are manifested in the following:

- defining the cognitive problem and the research objective;
- Students independently conducting the research;
- Explaining that the students' research is aimed at acquiring new knowledge for themselves;
- Make students aware that the learning research is aimed at achieving educational, developmental, and educational goals.

The following principles must be observed when conducting educational research: naturalness, awareness, independent activity, demonstrativeness, cultural appropriateness, and the application of a heuristic approach.

V.A. Dalinger also defined the main functions of the teaching research activity. They are: the discovery of new knowledge, the deepening of knowledge, the systematization of assimilated knowledge, and the development of students.

As can be seen, the experts have sought to substantiate the nature, distinctive characteristics, and structural components of the research skills intended for students' development. This serves as the methodological foundation for our research.

References

1. Narzieva, N.N. Formation of Research Skills in General Education School Students Based on Basic Competencies: PhD Dissertation in Pedagogical Sciences. Samarkand: Samarkand State University, 2019
2. Kuchkarov M.A. Methodology for Developing the Academic Research Skills of School Students Using Chemical Experiments: PhD in Pedagogical Sciences... Dissertation Abstract. — Chirchiq, 2023. — 48 p.

3. Lazarev V.S. Recommendations for Developing Students' Research Skills. — M., 2007. — pp. 3–4.
4. Khotorskoy A.V. Didactic Евристика: Theory and Technology of Creative Teaching. — M.: MGU Publishing House, 2003. — 416 pp.
5. Dalinger V.A. Methodology of Teaching Mathematics. Search and Research Activities of Students: Textbook and Practicum for Higher Education Institutions. 2nd ed., revised and supplemented. Moscow: Yurayt Publishing House, 2018. — 460 pp.
6. Dalinger V.A. Search and Research Activities of Students in Mathematics: A Textbook. — Omsk: Omsk State Pedagogical University Press, 2005. — 456 p.
7. Davydenko V.V. Theory of Developmental Learning. — Moscow: INTOR, 1996. — 544 p.
8. Shashenkova E.A. Research Activity: A Dictionary. — Moscow: US "Perspektiva", 2010. — 88 p.
9. Zimnyaya I.A., Shashenkova E.A. Research Work as a Specific Type of Human Activity: A Textbook and Methodological Guide. — Izhevsk; M.: UdGU, 2001. — 103 p.

