



DESIGNING A METHODOLOGICAL SYSTEM IN PEDAGOGICAL RESEARCH

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ABSTRACT: Thanks to the socio-economic policy carried out by the President and the government of the Republic of Uzbekistan, huge changes and incomparable updates are taking place in all aspects of the life of our republic, which creates a feeling of pride in the hearts of every citizen. It is known that several general concepts reflecting the essence of geography education methodology belong to certain categories. They act as leaders, forming a whole system of scientific geographical knowledge. For this reason, it is appropriate to carry out the content and essence of geography education, the processes of geographical knowledge in students and the specific features of the formation of geographical culture based on the main categories of geography education methodology. [Abdurakhmonov Botirjon Mirzamahmudovich. **DESIGNING A METHODOLOGICAL SYSTEM IN PEDAGOGICAL RESEARCH.** *Nat Sci* 2023,23(2):34-40].ISSN1545-0740(print);ISSN2375-7167(online). <http://www.sciencepub.net/nature> 05.doi:[10.7537/marsnsj210223.05](https://doi.org/10.7537/marsnsj210223.05).

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1. INTRODUCTION

The main professional pedagogical categories mentioned above also apply to the essence of geography education in schools. After all, the process of geography education based on pedagogical categories will be methodologically correctly organized. That is, basic natural geographical knowledge and skills that allow students to form geographical culture, their practical application should be implemented in the form of a system or complex based on a certain theoretical model.

Natural geographic knowledge and skills are formed in the course of natural geography lessons held in general secondary schools. Based on this point of view, we described the content of geography education as a holistic process and result in our research. For this purpose, we used the modeling method and followed the principle of a systematic approach. The following points of view were taken into account:

According to the studies of philosophers, psychologists and pedagogues (V.V.Davidov, Yu.G.Tatur, V.V.Kraevsky, etc.), pedagogical systems are characteristic of social structures, which have the following important features: purpose, common laws, and mutual real relations characterized by the presence [1; 3;7].

The pedagogical model, and especially the model of the educational process, programs specific learning activities and the sequence of their execution and results to achieve specific learning goals based on general learning goals.

The methodical system model is a set of interrelated, mutually demanding components consisting of methods, forms, means of planning, organization, teaching, learning, analysis and improvement of the educational process.

The methodical system of education consists of interrelated, ordered and mutually demanding methods, forms, planning tools for organizing, teaching, learning, analyzing and improving the educational process aimed at the effectiveness of students' education.

2. LITERATURE REVIEW

In sacred books such as Avesta, Qur'an, Hadisi-Sharif, in Uzbek folk pedagogy, in the works of our great thinkers such as Abu Rayhan Beruni, Abu Nasr Farabi, Abu Ali ibn Sina, Amir Temur, Zahiriddin Muhammad Babur, also M.V. Lomonosov, K.D. In the works of such world-famous figures as Ushinsky, V.I. Vernadsky, D.S. Likhachev, N.A. Roerich, A. Schweitzer, D.N. Anuchin, L.S. Like Berg, N.N.

Baransky, P.M. Kabo, Yu.G. Saushkin in the researches of geographers, the interrelationship and connection of nature and society., attention is paid to the fulfillment of geographical culture tasks, such as understanding the nature of a number of processes and events in it, getting acquainted with the natural and socio-economic bases of social production, targeting people based on their conscious and moral behavior in the environment.

3. METHODOLOGY

Geographical and geoecological aspects of the problem of sustainable development in Uzbekistan, as well as issues such as acquisition of geographical knowledge, use of educational tools and a conscious and responsible attitude to the environment, geographical culture and some theoretical aspects of its formation A.A. Abdulkasimov, I.Kh. Abdullaev, A.A.Azizov, Sh.Avazov, L.A.Alibekov, P.Baratov, B.A.Kamolov, A.N.Nigmatov, A.A.Rafikov; It was founded by A.G. Abdullaev and S.H. Matsaidova. From scientists of the CIS countries N.N. Baransky, I.I. Barinova, A.V. Darinsky, N.N. Demidova, I.V. Dushina, S.A. Kravchenko, O.A. Manzadey, V.P. Maksakovskiy, O.S. Mikhaylovsky, V.V. Nikolina, L.M. Pancheshnikova, Yu.G. Saushkin, D.P. Finarev, I.I. Fazylyzhanova and L.M. Khakimov, theoretical and practical foundations of geographical culture formation researched. The theoretical and practical level of acquisition of geographical knowledge is explained in the studies of foreign scientists R. Goodland, D. Harvey, P. Haggett, R. Peet, Ch. Rawding, E. Perramond and others.

4. RESULTS

Didactic modeling of students' geographical culture and its components in the process of geography education in secondary schools was carried out on the basis of the following principles [2]:

- a) accuracy and consistency of the concepts of "geography education" and "geographical culture of students";
- b) having a structural structure of geography education and geographical culture of students;
- c) almost the same complexity of the components that make up the content of geography education and students' geographical culture;
- g) brevity and accuracy of the description of these components;
- d) unity of speech and instruction in the transmission of educational material;
- e) relevance of educational materials to the geographical environment;
- f) the richness of information, enthusiasm of the geography education process, i.e. transition from simple activities to complex activities on the basis of constant consistency.

The modern features of the methodological system of teaching are as follows:

- planning the educational process on a scientific basis;
- mutual integrity of theoretical and practical training;
- difficulty level and quick assimilation of educational material;
- maximum activity and independent learning of students;
- the combination of individual and collective activity;
- enrichment of the educational process with educational tools;
- integrated approach to mastering various subjects.

Based on the above-mentioned didactic principles, we have theoretically grounded the model of the methodological system of using educational tools in the formation of the geographical culture of students and highlighted the main components of the model (see Figure 1).

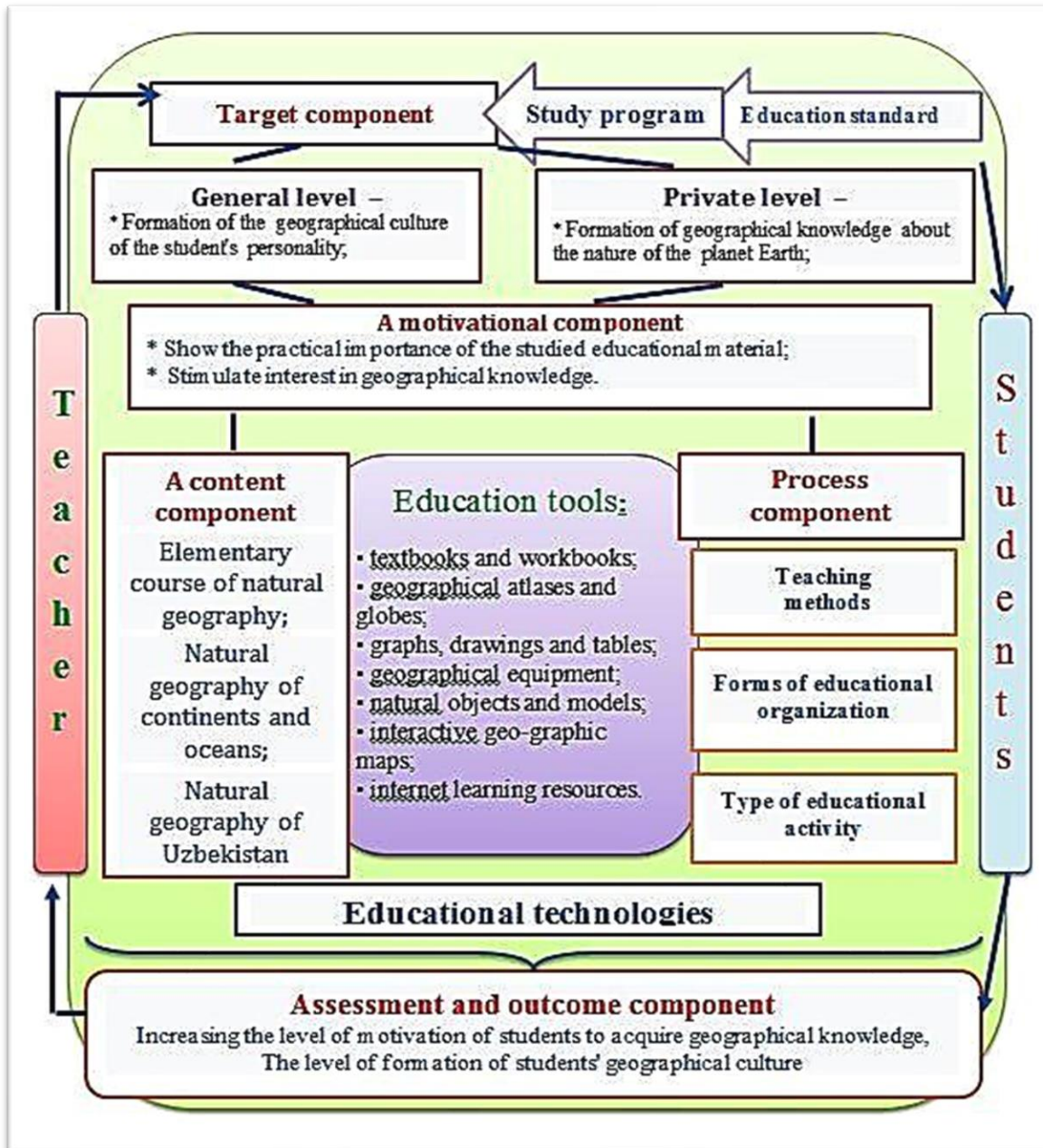


Figure -1. Pedagogical model of formation of students' geographical culture

In this methodical model, we look at the process of geography education as a whole process, taking into account the interaction between the teacher and the student in this process as a separate type of activity, showing the important place of educational tools in the process, and in this place, the teacher as the designer, manager and implementer of the process develops the personal qualities of the students and we connected the components that ensure the formation of geographical culture in them.

The target component (component) of the methodological system model, taking into account the content and requirements of the state educational standards and geography programs, embodies aspects that determine the quality of the student's personality at two levels, that is, at the general and private levels. If the goals of the general cultural level envisage the formation of the geographical culture of the student, the development of a creative, self-realizing person, the goals of the private level envisage the formation of knowledge about the nature of the Earth, the formation

of the necessary knowledge and skills according to the curriculum.

The motivational component included showing the practical importance of the studied material and encouraging interest in learning.

As part of the content component, natural geography courses taught in schools are defined in the geography program of the secondary general education system, namely, the "Primary Natural Geography" course taught in the 5th grade, the "Natural Geography of Continents and Oceans" course taught in the 6th grade, the "Natural Geography of Central Asia" taught in the 7th grade Geography" and "Natural Geography of Uzbekistan" courses were presented.

Educational methods, forms of educational organization and type of educational activity were included in the process component.

Educational methods, in turn, were classified according to the source of knowledge, according to the nature of the learning activity, and according to didactic goals.

In the form of educational organization part of the component, educational work performed in classes (lesson, practical training, elective courses), extracurricular (quiz, excursion, competition) and homework was defined.

According to the types of educational activities of this component, the educational process was divided into individual, small group, collective and frontal approaches.

Educational tools are seen as the main factor ensuring the effectiveness of the motivational, content and process components of this model, and the main classification units of the tools were introduced. For example, the classification of educational tools mainly includes geography textbooks, exercise books, geographical maps, globes, graphs, schemes, tables, tools, natural guides, models, interactive cards, electronic educational resources.

5. DISCUSSION

In our work, we thoroughly substantiated the methodological nature of the geography education process in experimental schools:

1. The content of the geography education process from the point of view of the activities of geography teachers and students includes the following components:

a) to study the pedagogical activities of geography teachers, to create a complete picture of the

processes of geographical knowledge, their conditions, methods and tools in students; to guide the activities of students in the process of performing geography education technologies and geographical educational and creative work; analyzed and controlled the progress of students in their studies, including checking and evaluating the development of geographical culture in them;

b) the educational activity of students consists of learning, accepting the instructions of geography teachers on geographical knowledge, understanding their essence, thinking and planning the work ahead; included the control of self and work results in the process of performing geography educational technologies and geographical educational-creative work.

2. From the point of view of educational tools, the content of the geography education process included the following components:

a) natural objects (collection of minerals, collection of rocks and minerals, herbariums, natural objects for excursions, etc.);

b) images of geographical objects and events (models, pictures, photos, portraits, photographs, slide films and slides, motion pictures, etc.);

c) description of geographical objects and events, their representation in symbolic form: verbally based manuals (textbooks, training manuals, workbooks, references, simple manuals (chronographies), etc.); cartographic manuals (maps, maps, etc.); graphic guides (graphs, diagrams, etc.);

g) tools for analysis and reflection of geographical objects and events (models, equipment, tools, etc. for observation, measurement and analysis of geographical objects and events);

d) methodological manuals for teachers (educational and methodological instructions and manuals on the organization of geography education and its methodology, methodological developments, reference manuals, best practices, methodological recommendations, etc.).

In the education of geography, experiments aimed at forming the geographical culture of students were organized and conducted in several stages. Tasks at each stage were clearly defined and their execution was ensured. Particular importance was attached to the determination of the unity and interrelationship between the stages. In this order, a chronological map of experimental works was created (see table 1).

**Table 1. Formation of geographical culture in students of directed experimental work
CHRONOLOGICAL MAP**

Steps	Main duties
Organizational-preparatory stage	<ol style="list-style-type: none"> 1. Designate test sites. 2. Determine the number of respondents. 3. Formation of experimental and control groups. 4. Talking with teachers and students, observing the educational process, conducting questionnaires. 5. Give instructions to responsible geography teachers. 6. Program development.
Stage of organization of experimental work	<ol style="list-style-type: none"> 1. Development of its methodology according to the theoretical model of the system of using educational tools. 2. Launching large-scale experiments and tests in experimental schools. 3. Preliminary examination of the effectiveness of the experimental methodology. 4. Enriching the ideas of experimental methodology with content, studying and practicing foreign experiences.
Final stage	Re-examination of the validity of the experimental methodology. Summarizing and analyzing the results of experiments. Development of general conclusions and methodical recommendations based on research results.

In the process of teaching geography, it was taken into account that the experimental work organized in the process of researching the problem of forming the geographical culture of students will give positive results if it is carried out in accordance with specific principles.

Based on the analysis of the logic of students' educational and creative activities and experimental-experimental work, the stability of the following principles ensures the effective provision of activities in the field of formation of geographical culture:

1. Clarity of the purpose of carrying out experiments.

2. Organization of experimental work on the basis of a systematic and comprehensive approach.

3. Ensuring objectivity in the formation of geographical culture among students.

4. Consistency, systematicity and purposeful organization of pedagogical activities aimed at the development of geographical culture among students.

5. Activity of subjects - students in the process of formation of geographic culture.

6. Creative and technological approach of geography teachers to the process of developing students' geographical culture.

Stage-by-stage components of the organization of the geography education process according to the content of the geography education during the experimental work: planning the process; preparation for the implementation of the process; implementation of the process; monitoring the progress and results of processes; methodical service technologies for the processes, especially the methods of formation of geographical culture in students, its compositional-structural structure and meson-indicators were tested.

According to the analysis of the results of the experiment, it was found that the students of the experimental group involved in the research process have more effective knowledge, skills and abilities than the students of the control group involved in the research process. To objectively assess this situation, a statistical analysis is carried out, only the determined conclusions confirmed that the experimental work was carried out effectively from the scientific, pedagogical, technological and methodical point of view.

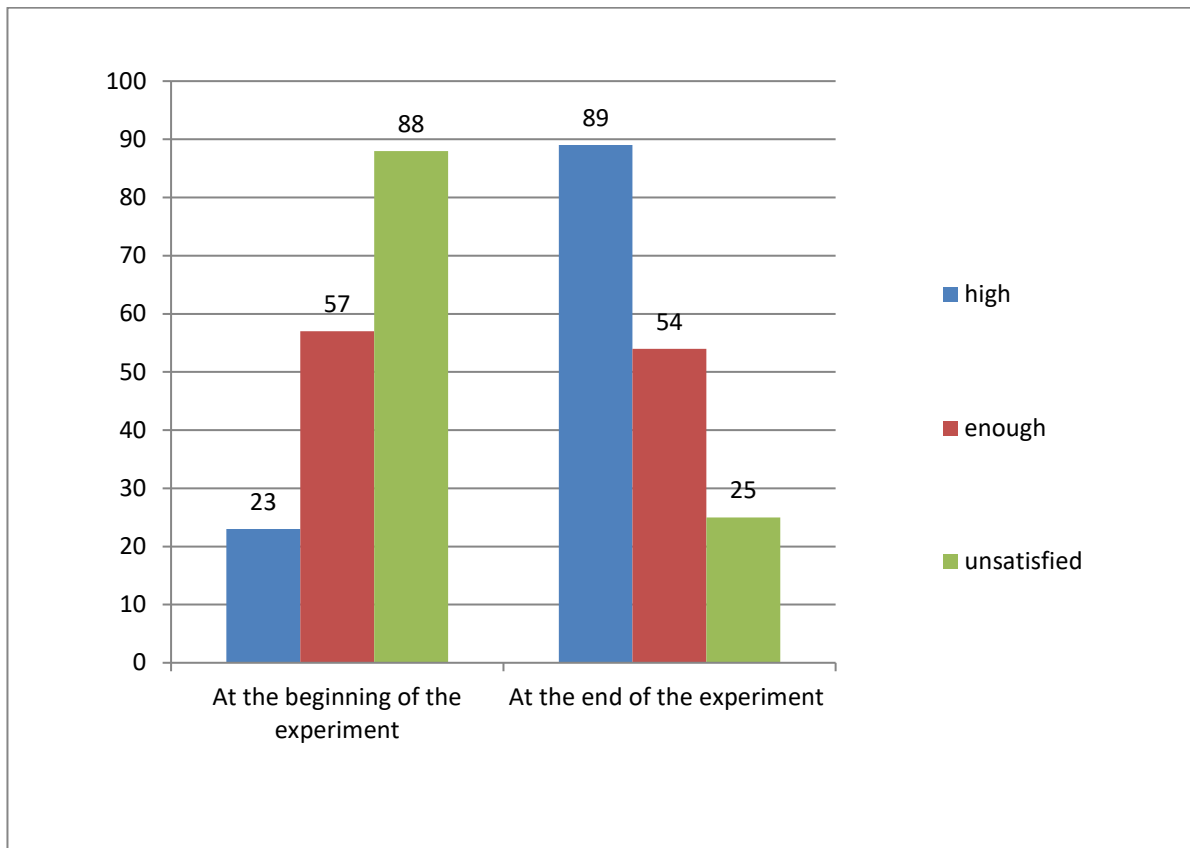


Figure 2. At the end of the experimental work of the students, the level is equal to the geographical culture

Experiments aimed at forming the geographical culture of students were organized in several stages.

Specific tasks were performed at each stage. Particular attention was paid to the determination of unity and interrelation between thresholds.

In this context, a chronological map of the experimental work and a method of forming the geographical culture of the students were developed.

1. The degree of formation of geographic culture at the level of geography education of secondary general education school students was determined through the following criteria and a set of specific indicators representing their content.

2. Through this system of meson-indicators, 3 levels of development of the formation of geographical culture among students were distinguished.

3. The results obtained at the end of the experimental work confirm the validity of the final conclusion, which represents the increase in the level of geographic culture among students of secondary general education schools.

4. The results obtained during the trial test confirm the successful completion of trial work. This

situation indicates the correctness of experimental and test works, as well as the correct implementation of research.

6. SUMMARY

Based on the results of the research on the use of educational tools in the formation of the geographical culture of students, the following was carried out:

- in Namangan State University was used in the process of improving the curriculum of the bachelor's degree in geography "5140600-Geography", in the development of teaching-methodical sets, in increasing the teaching efficiency, during the educational process in special subjects, during the pre-diploma process, and in the completion of graduation qualification work. As a result, the teaching programs, instructional manuals, instructions, electronic and other tools were improved, the special course "Formation of the geographical culture of students" was included in the "5140600 - Geography" undergraduate curriculum;

- suggestions and recommendations were integrated into the contents of the teaching-methodical

complex of natural geography of experimental schools in Namangan, Andijon and Bukhara regions and put into operation. As a result, the methodical system and technologies of using geography educational tools in the formation of geographical culture among the students of these educational institutions were improved.

- a set of natural geography educational tools was created, educational and methodological manuals, instructions for their use ("Natural geography: interesting lesson forms", "Geography: organization of seminars and practical sessions", "Using electronic cartographic applications in teaching geography", "Grade 5 geography exercise book", "Grade 6 geography exercise book", "Educational resource network Internet in teaching nature and geography: mobile applications") were published, and electronic textbooks, electronic stylistic manuals and exercises ("Meteorology" electronic textbook. "UzTerra 1.1" interactive cartographic simulator, "Natural geography: interesting lesson forms", "Electronic cartographic catalog", "Eurasia", "South America", "North America") were developed and put into operation. As a result, didactic-methodical provision of natural geography courses in secondary schools was improved.

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