Intent Research Scientific Journal-(IRSJ)
**ISSN (E):** 2980-4612
Volume 2, Issue 12, December-2023
**Website:** intentresearch.org/index.php/irsj/index

# SOFTWARE DESIGN AS AN ELEMENT OF THE PROFESSIONAL ACTIVITY OF AN INFORMATICS TEACHER

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**Annotation:**
Pedagogical design in the educational process conducted by a pedagogue has become one of the topical topics in recent years due to changes in social and cultural development. Many scientists have given a number of opinions and comments on the organization of pedagogical design processes in education. The design process covers the situation from the beginning to the end of the work in the organization of work, which is considered relevant in each field . Pedagogical designing is of great importance in the organization of the educational process. Explaining using pedagogical designing in the process of education means gaining new knowledge about it.

**Keywords:** project, design, pedagogical design, problem of pedagogical design, social pedagogical design, formation of ideas.

## Introduction

The problem of pedagogical design has become very relevant in recent years due to the change of socio-cultural priorities in all areas of social development, including education . NGAlekseev, EAKryukova, IVKotlyarov, VE Radionov, VI Slobodchikov, JTToshchenko and others emphasize that educational content can be an object of design.

Taking into account all possible interpretations of the essence of design and following the basis of the formation of pedagogical design, we highlight approaches to understanding the latter.

Analysis of the definition showed that the most general interpretation of the concept of "design" is given in technical and social science fields, as well as in ergonomics. Design in the broadest sense is defined in the scientific literature of construction, art and architecture, where "design" includes the analysis of a particular sequence, verification and relation to experience and standards. is understood as an iterative process.

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L. Archer describes design as "purposeful activity to solve problems." M. Azimov describes it as "decision-making in the conditions of uncertainty, which will lead to serious consequences in the event of an error."

P. Booker and T. Woodson design is an iterative process in which design development decisions are made repeatedly and the design object is repeatedly simulated . J. Page understands the design process as "an inspired leap from the facts of the present to the possibilities of the future . " G. Nadler and J. Jones point to the functional importance of design, which consists in creating ideal models of objects that are better than existing ones in some respect and serve to satisfy social needs. Despite the differences in approaches to understanding the nature of design, the common thing is that it is a process of solving a problem to achieve a specific result.

The analysis of historical documents showed that design originates from constructive sciences: system engineering, operations research method, ergonomics, technical aesthetics. P. Booker , T. Woodson , J. Jones and others as noted , this in the fields design result is a project . J. Jones according to the design purpose a person wrapping standing artificial in the environment changes from the start consists of From this come it turns out that designing is built in the environment changes starting process _ Technology , sociology , economy and pedagogy point of view in terms of this of the environment elements cities , buildings , products , laws , society opinion , education content and others to be can Studying management processes, VM Shepel defines the following design stages, which include the development of: 1) a theoretically based project; 2) procedures for its implementation; 3) a set of tools for each stage; 4) measurement criteria and methods of determining the results of the implementation of the plan ; 5) conditions and means of protection of human rights and dignity in a specific situation.

Thus, it can be said that the following steps are common : setting goals; development of a theoretically based project; make it happen; analysis.

In connection with the development of social processes and phenomena, attempts to build a "bright future of humanity", a special direction - social design - has appeared, the purpose of which is to organize a process that causes changes in life. social environment. The need to take into account the nature of relations between a person and society, in addition to social factors that affect various changes in the individual, led to the emergence of socio- pedagogical design .

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purposeful impact on the socio-pedagogical space.

JT Toshchenko considers socio-pedagogical design as an activity aimed not only at foresight and subjective determination of the plan, but also at the study of socio-pedagogical laws, purposeful development of the ability to interact with psychological abilities. personality development. It describes the design logic by clarifying common needs; setting a goal in the form of a desired result; choosing the means to achieve the goal; adopting a clear concept in the form of a program of actions.

A similar approach to design logic EA Kryukova presents it as follows: 1) development of a plan - the general idea of a system of factors that ensures the achievement of the goal; 2) goal setting, taking into account the sources of goal setting; 3) collection of necessary information and selection of means to achieve the set goal, ensures its achievement; 4 ) dynamic structure of the process ; 5) to consider options for the development of mutual relations between subjects; 6) diagnosis of results; 7) registration of design process and results.

Thus, the logic of social and socio-pedagogical design has common stages: setting goals; selection of means to achieve goals; implementation and correction of results.

Pedagogical in the 80s of the 20th century design socio-pedagogical design in parallel with develop started _ Problem according to of work analysis that's it showed that , pedagogical design uncertain defined .

II Ilyasov, MV Klarin and others stated that the pedagogical project has its own logical structure and normative basis, that it is carried out purposefully and consciously, but if the project is based only on logic and theory, the objects of pedagogical design are implemented , they say. dry, detached from reality. With a broader understanding of pedagogical design, NG Alekseev, along with the mind, activity, feelings, will and abilities of the design subjects, participates. OS Anisimov, RU Bogdanova , GL Ilyin and others believe that pedagogical design includes the organization of "new" relationships between the teacher and the student, helps to establish cooperative and cooperative relationships between adults and children. 'attention, and thus the authors determine the place of design . in the teacher's professional pedagogical activity.

VS Bezrukova focuses on the aspect of activity and considers pedagogical design as the preliminary development of the main details of the future activities of students and teachers. This definition shows the most general and simplified

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action algorithm.

Activity of the teacher in creating the pedagogical process. Kraevsky "pedagogical design is a specific form of setting social goals." We are close to TK's approach. According to Smykovskaya, "pedagogical design is a practical scientific direction of pedagogy and an organized practical activity aimed at solving the problems of development, change, improvement, contradictions in the functioning of systems, modernization of pedagogical processes in certain conditions." This definition one series conditions with determined design problems uncertainty directed . To his words According to TK Smykovskaya , design of the organization important aspect his is continuity . Continuity organized of processes mutually _ dependence , gradualness and divisibility as is determined . It is designed stages organize of reaching importance emphasizes , next of stages each one's previous with connection and mutually dependence bases , the previous one while the next one organize to do directed ; next stage to the authors help will give and that's it with together education processes - development and improvement complete to complete possible thinks not .

V.A.'s to his words according to Chenobytov pedagogical design ( project create ) - the project in logic created of the model next development ( detail , decomposition ) and him useful pedagogical the result get mechanism description level deliver , that is. Practical use to the level of Projecting of the process composition of the idea come from the output useful pedagogical to the result reach need to " pass " . has been known one series with stages ( stages ) . described project from the logic another thing it's not .

XX works in the mid -90s . VV Arnautova , GL Ilyin , VM Monakhova , VE Radionov and of others to his opinion according to pedagogic design definition of the teacher professional of activity element as manifestation will be and their in his opinion , procedural to the feature have _

We are E. A.'s approach action we do Kryukova [108] ( personal development aspect ), it is pedagogical the project certain pedagogical object , event or the process set giver knowledge complex as to be considered known one pedagogical the system done increase conditions determination according to activity as determines _ This interpretation design conceptual the basis of it meaningful and semantic core defines and design to the goal compatibility and dynamism indicator being service does _

Pedagogical design in the framework of our research is defined as the purposeful

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activity of creating conditions for the application of scientific knowledge to change educational practice, planning and implementation of future activities.

Pedagogical design, NG Alekseeva EAKryukova, TKSmykovskaya and others are based on the following general design principles:

- relying on scientific recommendations;
- new the system design for ideas of sources enough level completeness ;
- system design mutually dependence synchronization ;
- free creation of project ideas (aimed at ensuring the creative nature of the project);
- participation achieve ( har how subject by when designing participation to reach acceptance do );
- absolutely voluntary participation;
- distribution of work and responsibility (implies specialization and coordination of work in the construction team);
- "team" work of the project ;
- a clear desire to develop and make agreed decisions on the project);
- unity and continuity of design.

Researchers identify different stages of pedagogical design . Thus , TK Smykovskaya refers to the following sequence of stages : design ideology; logical structure of pedagogical systems, objects, processes; identification of paradoxes in the iterative nature of pedagogical research; the problem of choosing an adequate monitoring system and counters; examination of the created project. The proposed option, in addition to choosing a design direction, allows the designer to monitor the results of actions with the help of a measuring system equipped with special tools that provide objective verification of the project .

VV Serikov and others offer the following logic of pedagogical design: plan development ; diagnostic target task; determination of content and conditions leading to neoplasm; a generalized description of the pedagogical situation; dynamic systematization of the process; diagnostic results.

IA Kolesnikova (aspect of personal development) presents the logic of pedagogical design as a sequence of the following stages: goal setting; prediction; design practice; obtaining and evaluating results. The established design logic, in our opinion, does not consider the boundary conditions of the project implementation, which determines the exclusion of the project correction

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phase.

VE Radionov (instrumental aspect) believes that pedagogical design should go through the following stages: 1) before the implementation, when the need for changes is implemented; 2) decomposition, that is, dividing the master plan into a number of more specific tasks and choosing appropriate means for their implementation; 3) transformation, in which the original ideas have a clear structure and are filled with real content; 4) convergence, where the "collection" of private design solutions into programs for the development of educational systems and educational standards takes place . The presented sequence of design stages reflects each of them in detail and shows the implementation of the project as a continuous process, but in this scheme there is no stage of working with goals that ensures the participation of process subjects in the design activity. design.

ES Zaire-Bek (system aspect) defines the following steps: defining the plan; project sketch; development of action models (strategy); planning realistic strategies and conditions for their implementation at the task level; organization of feedback, evaluation of the process; evaluation and analysis of results. In this scheme, at the same time as the development and implementation of the project, the examination of the progress and results of the project is organized, which makes it possible to highlight the integrated design procedures.

In the works of AMSaranov, he described in detail the general scheme of pedagogical design : 1) planning begins with situation analysis, identification of contradictions, identification of problems to be solved, diagnosis of problems, selection of ideas for solutions and their coordination; 2) systems of value systems for generating ideas, developing a project, creating a diagram or image - sketching a project, putting forward hypotheses, determining design goals according to specific criteria, forecasting, developing and evaluating solution options, choosing the most effective. , determining the system of design methods, that is, forming the project concept; 3) development of generalized models of action, that is, a strategic program for managing project implementation; 4) to clarify the tasks to be solved, to determine and justify the conditions and means for achieving the goals, to develop the tactics of actions and the system of interactions for the implementation of projects, that is, to plan the implementation of strategies; 5) implementation of the project, continuous feedback, process evaluation, improvement, adjustment are organized at this

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stage; 6) evaluation, analysis and synthesis of results, determination of further directions of activity; 7) registration of the design process and specific products of pedagogical creativity - project documents, publications, communications, reports, etc. The author focuses on clarifying the goal at each stage. In addition, analysis, diagnosis, forecasting and correction are constantly accompanying pedagogical design, which corresponds to the activity of the designer.

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