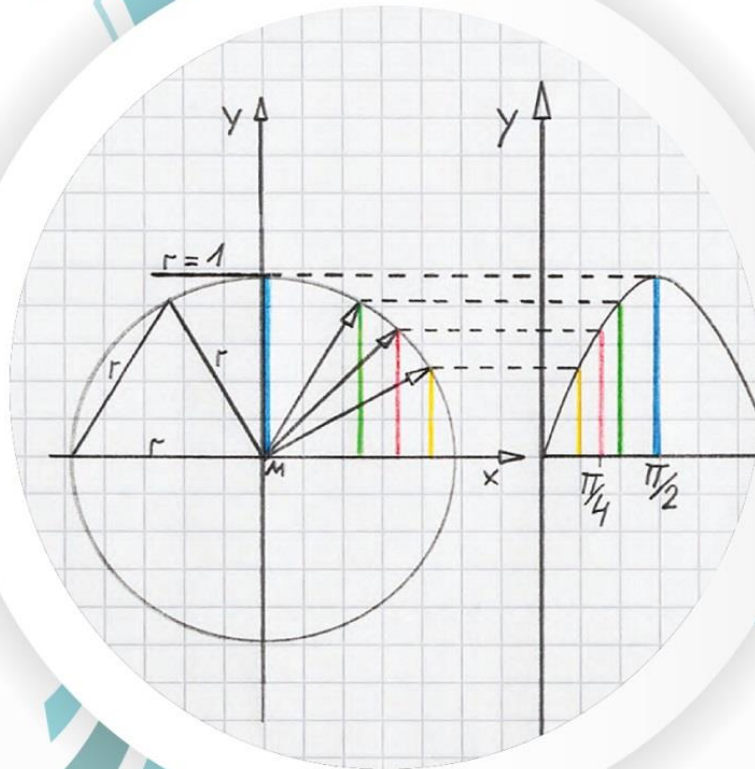


INTERNATIONAL JOURNAL OF

# ENGINEERING MATHEMATICS: THEORY AND APPLICATION



Indexed by:



Universal  
Impact Factor



IMPACT FACTOR  
SEARCH

## Editorial Team

### G. Ahmed

Professor of Computational Engineering Mathematics and Numerical Analysis  
Department of Engineering Physics and Mathematics  
Associate editor-in-Chief  
Dr. Hamed Daei Kasmaei  
PhD in Applied mathematics-Numerical analysis and computational  
Department of Mathematics and Statistics,  
Honor President of IEEMS  
Mahim Ranjan Adhikari  
Department of Mathematics  
Calcutta University  
India  
Carlo Cattani Professor, Tuscia University, Viterbo  
Department of Economy and Enterprise DEIM  
Italy E-mail: [ccattani@unisa.it](mailto:ccattani@unisa.it)

Dr. Sunil Kumar National Institute of Technology  
Jamshedpur Department of Mathematics  
India Email: [skiitbhu28@gmail.com](mailto:skiitbhu28@gmail.com)

### Praveen Agarwal

Ph.D., Professor  
Anand International College of Engineering  
Department of Mathematics Jaipur India  
Email: [goyal.praveen2011@gmail.com](mailto:goyal.praveen2011@gmail.com)

Thomas Korimort Mathematician  
Computer Scientist Dr. tech. Dipl.-Ing  
AMS University of Leoben Vienna University of  
Technology Austria Email: [tomkori@gmx.net](mailto:tomkori@gmx.net)

Dr. Stephen Kirkup  
Lecturer in Nuclear Science / Engineering  
School of Engineering Computing and Technology  
Building, CM138 University of Central Lancashire  
United Kingdom Email: [smkirkup@uclan.ac.uk](mailto:smkirkup@uclan.ac.uk)

Dr Mehmet Senol  
Nevsehir Haci Bektas Veli University Department of  
Mathematics Nev\_sehir  
Turkey  
Email: [msenol@nevsehir.edu.tr](mailto:msenol@nevsehir.edu.tr)

Dr. Muhammad Sadiq Hashmi  
Associate Professor  
Department of Computer Science  
COMSATS Institute of Information Technology  
Sahiwal Campus  
Pakistan  
Email: [sadiq.hashmi@gmail.com](mailto:sadiq.hashmi@gmail.com)

Hector Vazquez Leal  
Full Time Professor  
School of Electronic Instrumentation  
University of Veracruz  
Mexico Email: [hvazquez@uv.mx](mailto:hvazquez@uv.mx)  
Dr. Jyotindra C. Prajapati  
M.Sc., M. Phil., Ph.D., MIMS, MISTE  
Principal, Faculty of Science  
Marwadi University  
Rajkot-Morbi Highway  
RAJKOT- 360003, GUJARAT  
India  
Hasan Bulut  
Faculty of Science Department of Mathematics Firat  
University Elazig Turkey  
E-mail: [hbulut@firat.edu.tr](mailto:hbulut@firat.edu.tr)

Fethi Bin Muhammad Belgacem Department of  
Mathematics Faculty of Basic Education  
PAAET, Al-Ardhiya Kuwait E-  
mail: [fmbelgacem@gmail.com](mailto:fmbelgacem@gmail.com)  
Avishk Mahim Adkhaira  
Associate Professor of Mathematics Calcutta  
University  
India E-mail: [math.mra@gmail.com](mailto:math.mra@gmail.com)

János Kurdics  
Professor of Mathematics University of Nyiregyhaza  
Hungary Academic Member of ATINER  
Athens E-mail: [kurdics@nyf.hu](mailto:kurdics@nyf.hu)

CONTACT  
Professor of Computational Engineering Mathematics and  
Numerical Analysis  
Faculty of Engineering  
Zagazig University  
Zagazig  
P. O. 44519  
Egypt  
<http://iejemta.com/>  
Email: [sgamil@zu.edu.eg](mailto:sgamil@zu.edu.eg)



## INNOVATIVE TRAINING IN HIGHER EDUCATION INSTITUTIONS MANAGEMENT FUNCTIONS

**Ernazarov Alisher Ergashevich**

Head of the Department of Information Technologies of Samarkand Institute of Economics and Service, Doctor of Philosophy, PhD. [alexchigatay1213@gmail.com](mailto:alexchigatay1213@gmail.com)

**Chinqulova Gulmehra Bahronovna**

Samarkand State Institute of Foreign Languages. Tutor of the Faculty of Romano-Germanic Languages.

[gulmehracinkulova@gmail.com](mailto:gulmehracinkulova@gmail.com)

**Abstract.** In this article, special emphasis is placed on the positive impact of innovative training management functions on the further improvement of the quality of education in higher education institutions. Proposals and recommendations are given for improving the activities of educational institutions, making full use of the available opportunities in providing students with quality knowledge, organizing innovative activities, and organizing their management in a scientific organization.

**Keywords.** Quality Of Education, Qualitative Knowledge, Training, Technological Approach, Setting The Goal, Forecasting, Planning, Standardization, Pedagogical Technology.

### I. INTRODUCTION

In order to further improve the quality of education in higher education institutions, it is necessary to pay attention to the management of educational activities. A number of issues such as the creation of a national system of knowledgeable, highly qualified, competitive, entrepreneurial personnel at the level of developed countries, a deep understanding of the psychological aspects of education, the search for new forms and consistent ways for learners to acquire independent knowledge, and the creation of a psychological system for managing educational activities for learners, requires the development of new methods of organizing educational training, further improvement of the methods used. In this context, a model of innovative training management functions was developed.



## II. LITERATURE REVIEW

The following scholars have considered model, forms and design principles of innovative training management functions in higher education institutions in their research: Avliyakov N.Kh. [1], Allan Carrington [2], [4], Klarin M.V. [3], [5], Korostyleva N.Ya. [6], Kuzmina N.V. [7], Lebedev O.E. [8], Levites D.G. [9], Lutfillaev M.Kh. [10], Mavlyanov A. Abdalova C. Ernazarov A. [11], Ernazarov A.E. [12], [13], [14], [15].

## III. RESEARCH METHODOLOGY

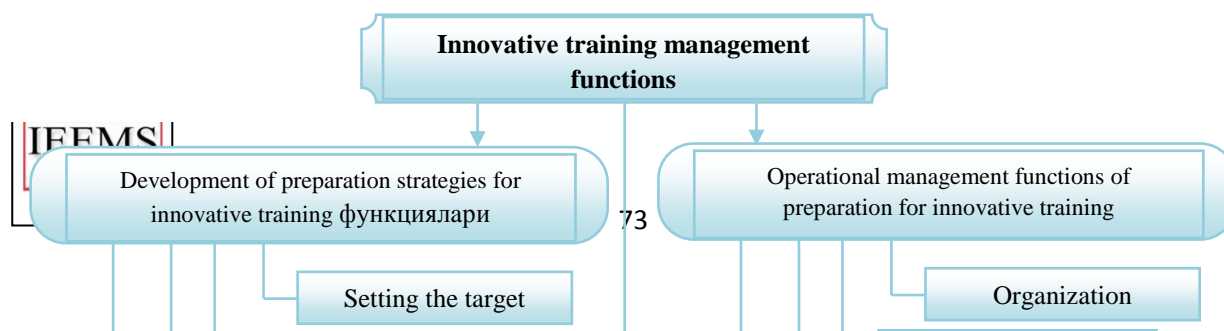
In this research, we used methods of logical analysis and synthesis, grouping, comparative and structural analysis, abstraction, factor analysis, induction and deduction.

## IV. ANALYSIS AND RESULTS

In modern socio-economic conditions, the attitude towards the educational system, the facilities created in educational facilities, all the positive work done in the direction of the development of material, technical and scientific-educational support are aimed at their development, which, in turn, creates the need to improve the management of educational training in accordance with modern approaches.

It is important to improve the activities of educational institutions, to fully use the available opportunities in providing quality knowledge to students, to organize innovative activities, and to organize their management in a scientific organization. This includes team unity, organizational, psychological relations, the level of development of self-management in the team, content and level of management activities, professional-psychological preparation and personal abilities.

In organizing training management, it is important to take into account the relationship between leaders, the uniqueness of these relationships and their importance in educational relationships, the nature of the factors that affect their individual psychological abilities and personal and professional development.



**Figure 1. Model of innovative training management functions.**

The dynamics of the activity processes are taken into account when determining the structure and components aimed at the effective implementation of educational processes. These processes can be divided into the following types. The educational process is directed to the educational goals, the achievement of the intended results, and the supporting process has a direct impact on their results, creates and provides the necessary conditions for the performance of its educational tasks.

From this point of view, in the above model of innovative training management functions, the main focus is on the development of preparation strategies for innovative training (goal setting, forecasting, planning and standardization), operational management of this training (organization, leadership, provision and motivation). ) and focused on feedback relations with students in management (analysis, calculation, control and quality monitoring). This, in turn, serves to improve the quality and camaraderie of training.

Rapidly changing scientific and technical requirements, changes in the educational system have led to the emergence of conflicts between the competitive





training of personnel, the development of the individual, the needs of the society to meet its educational needs, and the teaching methods. A positive technological approach to training is organized as a factor of achieving such goals as improving this process, ensuring its camaraderie and enrichment. The use of advanced technologies in training is an important factor in preparing students who can fully understand the essence of the production process, who have the ability to positively solve the problems that arise, who can think independently and have a broad worldview, and who are qualified in their profession, as well as in order to constantly improve their professional skills. The use of technological approach allows to achieve guaranteed educational goals. The approach to didactic design elements created within the framework of the technological approach helps to plan the educational process rationally, but at the same time creatively, to enrich it with new ideas, and to evaluate their results.

It is very important that the authors of textbooks also take into account the possibilities of teaching in pedagogical technology. It should be noted that in the traditional educational process, it is possible to use the elements of the technological approach in full. First of all, it refers to ways of clarifying individual educational goals, which can be placed as the central point of pedagogical technology. The unique power of pedagogical technology is that the educational process is designed and implemented in it to ensure the achievement of educational goals. Technological approach, first of all, is not on the surface, but is expressed in a constructive, demonstrative scheme that allows to realize the planned result.

A pedagogue working in the educational system should be able to use advanced pedagogical technologies, ways to activate the training process, and pedagogical ways to form quality knowledge, skills, and abilities in the subjects being taught. He should be able to study the essence, purpose and tasks of pedagogical technologies, develop scientifically based information, practical guidelines, and introduce them to the process of training.



The introduction of these technologies into this process requires creative research from the pedagogue. Since he has the knowledge, skills, training facilities, and the ability to direct the possibilities of this technology in accordance with the goal, he can set a clear goal for the students in accordance with the state educational standards. Forms of organization of educational activities were created, taking into account the specified goals and tasks. The development of forms was carried out according to a systematic approach, in accordance with the sequence of creating a system of goals and achieving it.

**Table 1**

**Forms of organization of educational activities**

<b>General forms of organization of educational activities</b>	<b>Internal forms of organization of educational activities</b>	<b>External forms of organizing educational activities</b>
Individual	Introductory training	Drac
Paired	Training to improve knowledge, skills and abilities	Game
With a group	Practical training	Seminar
Collective	Generalization and systematization of knowledge	Lecture
Frontal	Knowledge and skills control training  Combined form of training	Conference
		Excellent work
		Excursion
		Laboratory work
		Optional training
	Other forms	

Today, in our society, the formation of new social relations, the integration of education into the world education system, the development of democratization processes require a new approach to pedagogical technologies in the course of training.

The need to introduce and master these technologies and bring them into educational settings is emphasized in the national curriculum.

Today, there are certain reasons behind the increasing interest in pedagogical technology, namely: the need to use modern pedagogical technologies in order to increase the camaraderie of educational training; the increasing volume of information as a result of the rapid development of science and technology;



application of modern techniques and technologies in the educational process, the need to use information technology and technical resources in this process; to set the activities of students and pedagogues in the right way, the pedagogue should know the purpose and content of education, should have mastered the methods, methods and tools of teaching, should be able to direct the interest and aspirations of the student in the right direction; the pedagogue should clearly define the goals and tasks for the purposeful organization of the training process , record its results in advance, prepare the necessary teaching conditions and conditions to achieve full mastery of the subjects; creation of necessary material and technical base for training sessions; the need to fully evaluate the results of training sessions, to control the acquisition of knowledge, skills and competencies of learners, and to achieve automation of evaluation.

In order for a pedagogue to introduce pedagogical technologies into practice: to clearly and clearly define the purpose of training sessions according to the needs of the time, to master the content of this process according to science, to improve his pedagogical skills regularly, to be familiar with the implementation of the didactic process, to use a structured form of teaching in the implementation of training sessions , should be able to use computers and technologies, and regularly monitor and evaluate the learning of students.

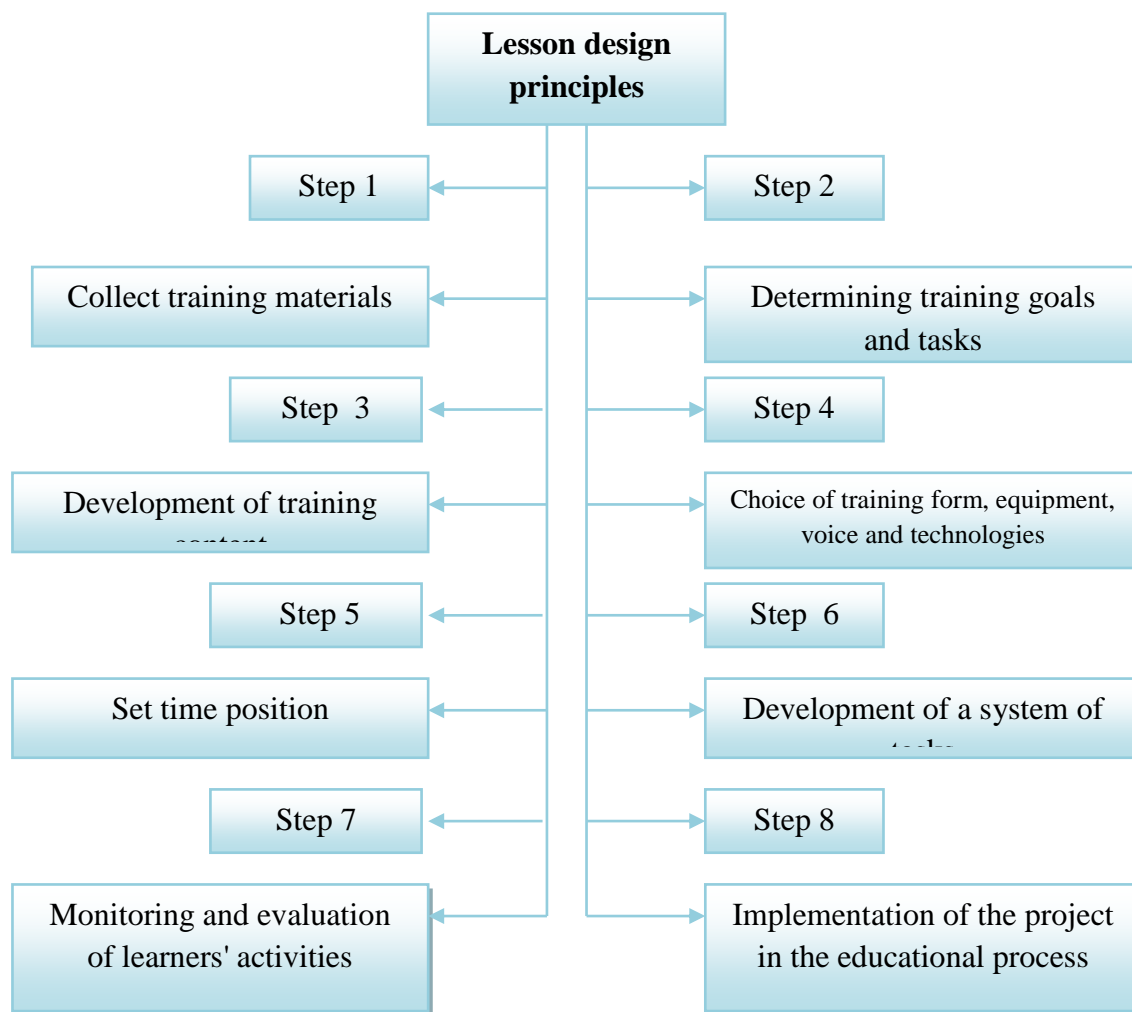
Pedagogical technology represents the process of planned education and educational activities aimed at a specific goal, that is, this technology is designed for the process of educational activities and is focused on solving the specified goal. Design consists in determining the set of goals and means of its implementation.

In this case, work is carried out in the following sequence: determining the time of implementation of educational technology; analysis of educational materials; separation of goals and tasks; bringing educational materials to a certain structure and dividing them by time; determining the steps of mastering knowledge, skills and abilities, as well as the development of qualities and qualities of a person; to determine the points and vocitas of interest of learners.





The work of the educational technologist consists of two parts: the training of the educational designer and the implementation of the project. In the training of an educational designer, the project is a part of the activities of the pedagogue or expert, and has a number of general powers. Project acocide is the joint activity of pedagogues and learners in the future. The educational designer begins by analyzing the content of the information according to the requirements of the State Standards.



**Figure 1. Principles of designing the training process.**

The analysis is focused on how elements of information content (knowledge, skills and abilities, experience of creative activity, relationships) are given in lectures, how they are reflected in training. Then the content of education is studied, the purpose of learning this or that subject, the didactic purpose of education, the purpose of pedagogues and learners, the implementation of the purpose and the questionnaire, the amount of homework, the test tests carried out on the subjects, the rating control

steps, mastering at the benchmark level. uculi is predetermined. In the process of processing the learned knowledge, new changes, additions and corrections are made to the project based on the results of the current control. Making general conclusions on the department or topic, applying the conclusions to complex educational situations, collecting information on the topic or department according to the results of interim control, analyzing the progress made by learners in the processes of processing the collected information, showing the shortcomings of their knowledge and skills, experience of creative activity, giving each learner in the group additional tasks to be completed until the final control, encouraging them to master the learning materials more comprehensively, the main task of the final control is to determine whether the learners have mastered the elements of information and educational content at the standard level, to warn the learners who have mastered the pact from the standard level, to give additional tasks, etc.

Modern pedagogical technologies require creative activity for each of the steps, from clearly setting the educational goal to evaluating its results.

The indicators given above fully represent the technological level of the designed educational process, its implementation in practice will turn the pedagogue into a highly qualified student, increase the reputation of the learner and open up new aspects of the development of creative activity.

It is based on principles such as regular analysis of modern pedagogical technologies, the ability to determine the relevance of the selection of design elements, pre-analysis of the required result, and ensuring the integrity of the educational process.

In this step of solving the pedagogical task, it is possible to show the activity of a pedagogue who is independently oriented and interconnected in order to design the content, objects and forms of his and the learner's activity. Accordingly, the content of pedagogical process design is manifested as a unity of material and activity design technologies. The steps for designing the training process are given in the diagram above.



## V. CONCLUSION/RECOMMENDATIONS

Designing is carried out directly in the context of training sessions. In this process, it is necessary to pay special attention to the following activities: pre-familiarization of learners with the purpose and tasks of the subject being studied; announcing problems, assignments, as well as homework, independent work, and the order of their completion; to give instructions on the complete mastery of the subject, to tell the standards of mastery; to encourage students to active, independent activity, to draw their attention to the content of the subject, to tell how it is necessary to learn it; interest in learning and the need to solve problems; collecting information on the subject, organizing current control over them; changes related to the complete mastery of the topic, setting additions; processing the accumulated knowledge on the subject, making new changes and additions to the project based on the current control results: making general conclusions on the subject; collecting information on the subject according to the results of interim control; to analyze the achievements of learners in the process of processing them; to show their shortcomings in knowledge and skills, experience of creative activity; giving additional assignments to each learner in the group to be completed until the final control, directing them to master the educational material more comprehensively; determining the students' mastery of the content of the subject , warning those who have mastered the pact, giving additional tasks, etc.

## REFERENCES

- [1] Avliyakov N.Kh. New pedagogical technologies. Textbook for higher educational institutions. Tashkent. 2008;
- [2] Allan Carrington. Educational wheel. Access mode: PW\_only\_RUSSIAN-1080. "Theory and Practice of Modern Science" No. 1(19) 2017 832;
- [3] Klarin M.V. Innovations in World Pedagogy: Exploration-Based Learning, Play and Discussion. (Analysis of foreign experience) - Riga, SPC "Experiment", 1995 - 176 p;



- [4] Allan Carrington. Educational wheel. Access mode: PW only RUSSIAN-1080."Theory and practice of modern science" No. 1(19) 2017 832;
- [5] Klarin M.V. Pedagogical technology in the educational process: Analysis of foreign experience. - M.: Knowledge, -1989. P. 80;
- [6] Korostyleva N.Ya. Pedagogical goal-setting in modern school as an object of management: Dis. ... cand. ped. sciences., -2002;
- [7] Kuzmina N.V. Professionalism of the personality of the teacher and foreman of industrial training. M., -1990;
- [8] Lebedev O.E. Theoretical foundations of pedagogical goal-setting in the education system: dis. ... Dr. ped. sciences. SPb., -1992;
- [9] Levites D.G. Teaching practice: modern educational technologies. / M. : Publishing House "Institute of Practical Psychology"; Voronezh: NPO "MODEK", -1998;
- [10] Lutfillaev M.Kh. The form and methods of organizing lecture classes // Vocational education. - Tashkent, -2003. - No. 2. - P. 21-22;
- [11] Mavlyanov A. Abdalova C. Ernazarov A. "Designing training on advanced pedagogical technology". Modern education. -2016. #2. - P. 25-29;
- [12] Ernazarov A.E. Methods of modern organization and implementation of training. Journal of innovative publicationsNX- A Multidisciplinary Peer Reviewed Journal ISSN No: 2581 – 4230 VOLUME 6, ISSUE 5, May -2020. Pages: 311-315;
- [13] Ernazarov A.E. Specific features of training .International Journal on Integrated Education. DOI: <https://doi.org/10.31149/ijie.v3i5.375>. Volume 3, Issue V, May 2020. Ps. 30-34;
- [14] Ernazarov A.E. Clarification of the purpose and design of the training sessions . World Scientific News, Scientific Publishing House "DARWIN". WSN 80 (2017) 101-115;
- [15] Ernazarov A.E. Features of defining goals and objectives in training. Society and innovations - Obshchestvo i innovatsii - Society and innovations. <https://inscience.uz/index.php/socinov/index>. 15 April 2021 . Ps. 444-448.

