ORIGINAL ARTICLE

INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE

ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 03,2026

Journal: https://www.academicpublishers.org/journals/index.php/ijai

THE METHODOLOGY OF CONDUCTING PHYSICS LESSONS USING THE TRADITIONAL METHOD

Yu. G. Makhmudov
Professor at Tashkent University of Humanities,
Doctor of Pedagogical Sciences
Abdunazarov Akbar
Professor of Physics at Tashkent State Agrarian University

ABSTRACT

The article describes a creative approach to highlighting the methodology of teaching physics lessons using non-traditional methods.

Key words: traditional, method, system, independent, thought, initiative, memory, reproductive, process, intelligence, activity, effect, communication, rule.

It is well known that in the traditional method, the teacher explains the information, whereas in a systematic approach, logical consistency and clarity are present. The learner's initiative and independent thinking are realized in the research–creative approach.

The application of scientifically grounded methods contributes to the quality and effectiveness of education. The methods recommended by psychologist
Z.I. Kalmykova are quite justified in this respect. In her research, she categorized thinking into reproductive and productive (generative) types.

Thinking that is characterized by generating original ideas or making discoveries of significant scientific value is referred to as productive thinking. In contrast, the learner's thinking aimed at assimilating ready-made reasoning is considered reproductive thinking.

For several years, debates have persisted between traditional and non-traditional approaches to teaching. Traditional approaches involve explanatory, reproductive methods. In this case, learners are provided with ready-made knowledge, and the teacher organizes the transmission and consolidation of information. Students receive the knowledge, retain it in memory, and later reproduce it by recalling it.

In the traditional system, that is, the reproductive method, the assimilation of information is positively evaluated if the student can recall it after some time (for instance, when asked to complete tasks or during exams). This is because in this system, the measure of knowledge is primarily based on memory and retention. In our view, the drawback of the reproductive method is that learners do not engage in research or discovery; there is little diversity in thought, and not all provided knowledge remains in memory.

Although learners can acquire a substantial amount of knowledge through the reproductive method, their learning capacity remains passive, and the development of thinking and speech is limited. However, the reproductive method cannot be entirely dismissed, since knowledge is acquired through others (the teacher), providing a foundation for approaching problems creatively.

In traditional teaching, one of the main tasks of the teacher is to foster a certain motivation in students to memorize the material, as well as to teach them methods of memorization and the processes of reasoning. The advantage of teaching through the reproductive method lies in the connection between human intelligence and memory. The strength of human memory is a crucial condition for the formation of intellectual acumen.

To strengthen memory, the following conditions must generally be observed. First and foremost, one must have a sharp mind, comprehend and grasp material through understanding

ORIGINAL ARTICLE
INTERNATIONAL JOURNAL OF ARTIFICIAL INTELLIGENCE
ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 03,2026
Journal: https://www.academicpublishers.org/journals/index.php/ijai

and insight, repeatedly recall what has been studied, and retain it through observation. Thus, memory is a process closely linked with intelligence, intellect, reasoning, and talent.

Psychologist V. Karimova emphasized that memory is a complex process associated with memorization, retention, recollection, and forgetting, and she identified several factors influencing the quality of human memory [2]. Psychologist E. G'oziev [3] approaches the concept of memory from various perspectives, considering it, in particular, as the process of acquiring knowledge, productive or reproductive mnemonic activity, and a fund of knowledge necessary for practice [3]. In our view, memory is a reproductive (not productive) activity that involves memorizing, recalling, and understanding material.

The effectiveness of memorization is related to the level of the learner's intellectual activity, making it a mnemonic method. "The level of intellectual activity is directly related to their ability to acquire and manage methods of memorization. Mnemonic methods also include verbatim memorization of definitions or rules" [3].

Retention and recall processes stimulate memory, generate interest in learning, develop responsiveness, and are important for mastering rules and regulations.

Information can be stored in memory in several ways. Sequential, logical, and comprehended material tends to be retained more firmly. The American psychologist V. Quinn classifies the retention of material in memory as follows [4].

Sensory Memory Block	The information was received but not retained	Short-term memory block	The information must be retained	Long-term memory block	Extract the key information

The research results indicate that the unconventional methodological approach we applied, aimed at testing and reinforcing memory, is based, as V. Quinn emphasized, on the long-term memory block and the extraction of key information. In this approach, essential information is repeated several times and reinforced through practice. This is because human thinking develops based on information stored in long-term memory and the ability to selectively extract relevant information from many pieces of data, which, in turn, requires reproductive thinking.

The unconventional method we employed is, of course, dependent on the students' physiology and psychology. Adolescence is considered an effective period for engaging intellectual capacities because, during this time, their ability to read and comprehend is well-developed, providing favorable conditions for learning.

References:

1. Kalmykova, Z.N. Productive Thinking as the Basis of Learnability. Moscow: Pedagogika, 1981. – 117 p.
2. Karimova, V. Psychology. Tashkent, 2002. – pp. 96-97.
3. Applied Psychology. St. Petersburg, 2000. – p. 37.
4. Choriyev, A. Philosophy of Man. Tashkent: Chinor ENK, 2002. – 76 p.
5. Goziev, E. Psychology of Thinking. Tashkent: O'qituvchi, 1990. – 176 p.
6. Vygotsky, L.S. Mind in Society: The Development of Higher Psychological Processes. Cambridge, MA: Harvard University Press, 1978.
7. Piaget, J. The Psychology of Intelligence. London: Routledge & Kegan Paul, 1950.
8. Bruner, J.S. The Process of Education. Cambridge, MA: Harvard University Press, 1960.
9. Ausubel, D.P. Educational Psychology: A Cognitive View. New York: Holt, Rinehart & Winston, 1968.

ISSN: 2692-515-x, Impact Factor: 9.23
American Academic publishers, volume 6, issue 03,2026
Journal: https://www.academicpublishers.org/journals/index.php/ijai

10. Novak, J.D., & Gowin, D.B. Learning How to Learn. Cambridge: Cambridge University Press, 1984.
11. Brown, A.L., & Palincsar, A.S. Guided, Cooperative Learning and Individual Knowledge Acquisition. In L.B. Resnick (Ed.), *Knowing, Learning, and Instruction.* Hillsdale, NJ: Lawrence Erlbaum, 1989.
12. Mayer, R.E. Multimedia Learning. Cambridge: Cambridge University Press, 2001.
13. Sternberg, R.J. Teaching Critical Thinking. New York: Teachers College Press, 1987.
14. Jonassen, D.H. Learning to Solve Problems with Technology: A Constructivist Perspective. Columbus, OH: Merrill, 2000.