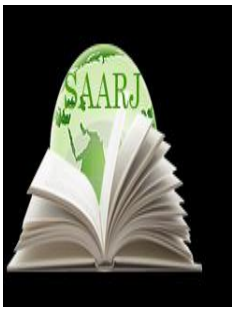

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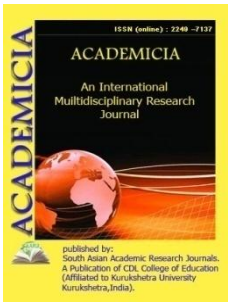

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POSITIVE ASPECTS OF INTERACTIVE LEARNING METHODS

M. SH. Fayziev*; S.S.Jumaev*; Majidov Sh.A; Sadikova D.A****

*Senior Teachers,
Navoi State Pedagogical Institute,
UZBEKISTAN

**Teachers,
Navoi State Pedagogical Institute,
UZBEKISTAN

ABSTRACT

This article reveals some aspects of the development of students' creative potential, which is one of the main factors in the quality of education. One of these goals is to create a comfortable learning environment, that is, the conditions under which the student feels his success, his intellectual competence, which makes the learning process itself productive. The joint activity of students in the process of learning, mastering the educational material means that everyone makes their own special individual contribution to this process, that there is an exchange of knowledge, ideas, and ways of activity.

KEYWORDS: *Interactive learning, interactive activities, cooperative learning, basic concepts of first-order differential equations.*

INTRODUCTION

Interactive training – this is learning, immersed in communication. However, "submerged" does not mean "substituted". Interactive learning preserves the ultimate goal and the main content of the educational process. It modifies the forms from broadcasting to dialogical, i.e., including the exchange of information based on mutual understanding and interaction.

Interactive learning has very specific and predictable goals. One of these goals is to create a comfortable learning environment, that is, the conditions under which the student feels his success, his intellectual competence, which makes the learning process itself productive. The essence of interactive learning is to organize the learning process in such a way that almost all

students are involved in the process of learning, they have the opportunity to understand and reflect on what they know and think.

Interactive learning simultaneously solves several tasks:

- develops communication skills, helps to establish emotional contacts between students;

- solves the information problem, since it provides students with the necessary information, without which it is impossible to implement joint activities;

- develops general learning skills (analysis, synthesis, goal setting), that is, provides the solution of learning tasks;

- provides an educational task, as it teaches you to work in a team, to listen to other people's opinions.

- creates relaxation of the participants of the educational process, relieves nervous stress, switches attention, changes the forms of activity.

The use of interactive teaching methods in the work gives

to the student:

- * development of personal reflection;
- * awareness of involvement in the overall work;
- * formation of an active subject position in educational activities;
- * develop communication skills;
- * adoption of moral norms and rules of joint activity;
- * increased cognitive activity

group:

- * formation of a group as a group community;
- * increase cognitive interest;
- * development of skills of analysis and introspection in the process of group reflection;

to the teacher:

* Non-standard attitude to the organization of the educational process;

* Formation of motivational readiness for interpersonal interaction not only in educational, but also in other situations.

The joint activity of students in the process of learning, mastering the educational material means that everyone makes their own special individual contribution to this process, that there is an exchange of knowledge, ideas, and ways of activity. And this happens in an atmosphere of goodwill and mutual support, which allows not only gaining new knowledge, but also develops the cognitive activity itself, translates it to higher forms of cooperation and cooperation.

Very often, teachers use various teaching methods, such as direct learning, research, and modeling. Each of these methods has advantages and disadvantages. Research makes learning active, modeling interactive. A new level of interactivity is inherent in cooperative learning [1-4].

Cooperative learning is a way of working in small groups, where students themselves are responsible for the educational process. The essence of this method: "Everyone achieves their learning goals only if the other members of the group achieve their own."

Co-education has many variations. One approach is "competing teams". First, the teacher explains the material, which the students then work with in groups to consolidate. Control is carried out by writing each control work. The current score is calculated by group and compared over time. The winner with the highest total of individual points is awarded. Another approach is "teams-tournament". The initial stage is exactly the same as in the first case. However, the test paper is replaced by a tournament, where team members compete against each other to earn the most points for their group. The third approach is a "picture-mosaic", when a whole canvas is made up of individual pieces.

Traditionally, in universities, seminars begin with listening to students ' reports, discussing the presented and studied material, and then discussing educational issues with a further assessment of the quality of the material learned on the topic. For example, the topic of the course of mathematical analysis "First-order differential equations" is studied by the traditional method of teaching. First, as a rule, there is a survey on the material passed, then listening to reports, for example, problems that lead to the concept of " differential equation»; the Cauchy problem on the existence and uniqueness of the solution of a first-order differential equation; the geometric meaning of the equation and its solution.

Then the training questions on the topic are analyzed:

1. General definition of a differential equation.

2. First-order differential equation (ordinary).

3. What does it mean to solve a differential equation?

The difference between the general and particular solutions of the equation.

4. The main essence of the Cauchy problem of solving a differential equation.

5. Geometric interpretation of the differential equation itself and its solutions.

6. The first skills of composing a differential equation based on the data of a certain problem.

The result at the end is that the two-hour lesson turns into a two-hour survey of students with a subsequent assessment of knowledge.

An interactive practical lesson on the same topic, for example, using the "teams-tournament" technique, will allow students to better remember and assimilate the proposed educational material.

The text for such a lesson is prepared in advance and divided by the teacher into several semantic parts. In this case, the topic is divided into three parts: general concepts and definitions of the differential equation and its elements, general concepts, definitions of the theorem on the first-

order differential equation and the composition of the differential equation of the first equation. Depending on the number of semantic parts, the number of students in a small group is determined. The maximum variation can be up to 6 parts. Let's assume that the text is divided into 3 parts. Let's imagine the stages of conducting a class through a tournament.

1. First, the participants are divided into small groups of 4 people. The training group of 15 people includes 4 small groups. Each student of the small group was assigned an ordinal number (from one to four).

2. Students, having received their part of the text, work with it for 15 minutes. If necessary, the teacher comes to the rescue. The fourth group - "experts" from among students who evaluate the answers of their friends on a ten-point system. Two criteria are evaluated - the complete answer and the answer to the questions asked by the experts.

3. The teacher, at the end of the lesson, conducts a summary, based on a table that is provided to him by a group of "experts". The results of the lesson are summed up.

Currently, more than 50% of the time provided for in the curricula of training specialists at the university is devoted to independent work, as one of the main factors in the development of the creative potential of students. In these conditions, it is very important to monitor its progress, so that this work, first, is carried out in a timely manner, and secondly, it is effective, that is, it allows you to achieve your goals. There are several areas, each of which requires its own control system:

- ✓ Independent preparation of students for each practical lesson or laboratory work, during which the study of lecture material, educational literature recommended by the teacher is required.
- ✓ Control is carried out in the form of a current cross-section of students ' knowledge, writing small (for 10-15 minutes) control papers or test tasks;

One of the weaknesses in the training of specialists is the inability of students to use the information obtained in lectures and practical classes to solve specific problems.

In order to improve the quality of knowledge and eliminate this shortcoming, it is necessary to develop a system of individual tasks that also allow you to exclude cheating when registering and submitting ratings.

The ability of students to improve themselves independently, to gain knowledge is important, because modern society and production need employees and managers who are able to think quickly and correctly solve specific problems that arise, conduct a dialogue with colleagues and partners, and make decisions independently. Therefore, it is necessary to use technologies related to modern requirements in the classroom.

This one of the interactive methods is *"project technology".* The essence and idea of it is to organize independent, creative, search activities of students.

The "technology of projects" is based on the idea of the orientation of the student's educational and cognitive activity on the result that is obtained when finding a solution to a particular practical or theoretical problem. The external result can be understood, applied, and seen in real practical activity.

The internal result – the experience of activity-becomes the property of the student, combining all the knowledge and skills, competencies and values.

The project method in the learning process allows us to develop educational skills, the student's communication potential, solve information problems, organize the interaction of all participants in the educational process, and activate the students ' mental activity. Their creative activity is the creation or discovery of something previously unknown to this student.

The work on the research project is carried out under the guidance of a teacher, but his role is to organize and adjust the independent activities of students.

Project activities of students can give the best results in the development of the student's creative potential. Preparation for a serious student activity begins with the very first year of study.

We offer an example of a project work on the subject "Mathematical analysis". Project topic: "First-order differential equations, and ways to solve them".

Project participants: students of the 2nd year of the Faculty of Mathematics.

Project implementation timeline:2 months.

Result: defending projects, and then helping fellow students who have difficulties with this training material. Tasks for groups (each group has 4-5 people):

Task for group 1.

1. Collection of information on the topic "First-order differential equations (general concepts). Equations with separated and separable variables of the first order", methods and methods of their solution" (using materials from textbooks and textbooks on mathematical analysis, reference books, the Internet).

2. Selection of 25-30 equations on this topic; explanations with solutions.

3. Making a report on the work done: theory + practical tasks.

4. Project protection. (Presentation), ("paper" version).

Task for group 2.

1. Collection of information on the topic "Homogeneous equations, linear equations", "Equations reduced to homogeneous ones and methods for their solution". (Use of materials from textbooks and textbooks on mathematical analysis, reference books, and the Internet).

2. Selection of 25-30 equations on this topic (together with the solution).

3. Making a report on the work done: theory + practical tasks.

4. Project protection. (Presentation), ("paper" version).

Task for group 3.

1. Collection of information on the topic "Differential equations in full differentials". Methods and methods of their solutions. (Use of materials from textbooks and textbooks on mathematical analysis, reference books, and the Internet).

2. Selection of 25-30 equations on this topic (together with the solution).

3. Making a report on the work done: theory + practical tasks.

4. Project protection. (Presentation), ("paper" version).

Task for group 4.

1. Collection of information on the topic "First-order differential equations not resolved with respect to the derivative". The Lagrange, Celera, and Riccati equations and their solutions. (use of materials from textbooks and textbooks on mathematical analysis, reference books, and the Internet).

2. Selection of 25-30 equations on this topic (together with the solution).

3. Making a report on the work done: theory + practical tasks.

4. Project protection. (Presentation), ("paper" version).

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