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# Sociopsychological Characteristics of Developing Constructive Thinking through Group Work in Technological Education

***Egamova Anbarjon Atanazarovna***
*Urganch State Pedagogical Institute, Faculty of Exact and Natural Sciences, Senior Lecturer, Department of Technological Education*

**Abstract**. *This article analyzes the socio-psychological characteristics of developing constructive thinking in students through group work in the technological education process. It is argued that group activity develops students' abilities for analysis, idea exchange, and creative problem-solving by activating their cooperation, communication, and joint decision-making processes. The study highlights the psychological importance of social interaction, motivation, and teamwork skills in developing constructive thinking. The research employed a review of pedagogical and psychological literature, along with observations, interviews, and questionnaires. It was determined that group work, organized based on the practical, technology-oriented content of the curriculum, serves to develop students' skills in understanding and analyzing problematic situations, developing effective solutions, and evaluating results. In particular, it was observed that during the group work on projects and problem-based tasks, students' exchange of ideas, collaborative decision-making, and reflective activities were activated.*

*The article also demonstrates that the positive psychological environment created during group work enhances students' intrinsic motivation, increases their self-confidence, and fosters a positive attitude toward the learning process.*

*The research findings confirm that the effective organization of group work in technology education is of great pedagogical importance, not only for students' constructive thinking but also for their social activity, communication culture, and teamwork skills also have significant pedagogical importance for developing students' social-psychological characteristics.*

**Key words**: *technological education, group work, constructive thinking, socio-psychological characteristics, collaboration, communication.*

## Introduction.

Currently, during the modernization of the education system, special attention is being paid not only to the students' knowledge and skills but also to developing their abilities for independent, creative, and constructive thinking [1]. In particular, in the technological education process, shaping students as active subjects and engaging them in a collaborative learning environment is emerging as an important pedagogical task. From this perspective, the issue of developing constructive thinking through group work is considered one of the pressing scientific problems in pedagogy and educational psychology [2].

Constructive thinking represents an individual's ability to understand and analyze problematic situations, search for solutions, and apply them in practical activities. This type of thinking is formed more effectively in students not individually, but through social interaction, communication, and collaboration. Psychological research has extensively highlighted the role of the social environment

in the development of thinking, emphasizing that students' collaborative activity increases their cognitive engagement and deepens their thought processes[3].

The practical orientation of technological education content, based on design and modeling activities, creates broad opportunities for effectively organizing group work. During group work, students learn to express their ideas, listen to others' opinions, make decisions together, and feel responsible for the overall outcome. This, in turn, develops social-psychological competencies alongside constructive thinking—communication culture, readiness for collaboration, and social responsibility[4].

At the same time, group work serves as an important psychological factor in strengthening students' intrinsic motivation, creating an environment of emotional support, and fostering mutual trust. In such an environment, students are inclined to express their thoughts freely, take creative initiatives, and approach problems constructively. As a result, the technological educational process serves not only the acquisition of knowledge but also the social and intellectual development of the individual[5]. Based on the above considerations, Scientifically analyzing the socio-psychological characteristics of developing constructive thinking through group work in technological education, identifying the effective mechanisms of this process, and applying them in practice is of pressing scientific and practical importance [6]. In this article, with a focus on these issues, the psychological aspects of developing constructive thinking through group work are extensively explored.

**Methodology**

This study is aimed at examining the socio-psychological characteristics of developing constructive thinking in students through group work in the process of technological education. The research methodology is based on modern approaches and scientific views in the fields of pedagogy and psychology. In particular, the theory of constructivist education, person-oriented education, activity-based approaches, and collaborative teaching concepts form the theoretical basis of the research.

During the research process, scientific literature and pedagogical-methodological sources on technological education were analyzed and summarized. The students' activity, interaction, exchange of ideas, and attitude toward problematic situations during group work were studied through pedagogical observation. Additionally, through interviews and questionnaires, students' attitudes toward constructive thinking and their psychological states regarding teamwork were determined.

The research was conducted in the technological education process, where lessons organized around group work played an important role. During practical sessions, students were divided into small groups and encouraged to express their ideas freely by collaborating on tasks, projects, and problem-solving situations. During this process, the teacher acted as a guide and advisor.

Throughout the study, changes in the students' levels of constructive thinking were compared. The obtained results were analyzed to determine the effectiveness of group work in developing students' social activity, communication culture, and independent thinking skills. The research findings were evaluated based on qualitative and general analysis, and conclusions were drawn.

**Results and Discussion**

The results of the study showed that developing constructive thinking in students through group work in the technological education process had a significant positive effect. Based on the analysis of pedagogical observations, interviews, and questionnaires, positive changes were observed in students' abilities to analyze problem situations, justify their opinions, and propose alternative solutions[7].

It was determined that during group-based activities, students' cognitive activity increased, and they were eager to freely express their opinions without fear of engaging in dialogue, this situation confirmed the important role of social interaction in the formation of constructive thinking[8]. In particular, during the process of working together on projects and problem-based assignments, students began to acquire skills in exchanging ideas, engaging in debate, and reaching a consensus. The research results showed that group work enhances students' intrinsic motivation and fosters a positive attitude toward the learning process. Students began to feel like important members of the team and to take responsibility for the overall outcome[9]. This activated the processes of reflection,

self-assessment, and drawing conclusions from mistakes, which are closely linked to constructive thinking.

The results obtained were found to be consistent with the theoretical approaches presented in scientific literature. In particular, the ideas of collaborative learning, as substantiated by V.V. Davыdov and D.B. Elkonin, as well as A.N. Leontev and P.Ya. The views of the Galperins on activity theory were confirmed by the research results. This indicates the scientific basis for developing constructive thinking through group work in technological education[10]. During the discussion, it was determined that the effectiveness of group work is largely dependent on the teacher's pedagogical and psychological approach. The teacher's guiding, encouraging, and advising role ensured students' active participation and helped foster a positive psychological environment[11]. In such conditions, students were inclined to approach problems creatively and constructively. Overall, the results and their discussion showed that group work in technology education is an effective pedagogical tool for developing students' constructive thinking. Group activities not only facilitate the acquisition of knowledge and skills but also ensure students' social-psychological development[12].

**Literature review:** Within the activity theory framework, A.N. Leontiev and P.Y. Galperin have demonstrated that practical actions and active participation are of paramount importance in the educational process. They emphasize that higher-order thinking can be achieved by gradually forming thinking operations. The practical orientation and integration with group activities of technological education content create favorable psychological conditions for developing constructive thinking in students[13].

The concept of socio-developmental education V.V. This concept is extensively covered in the works of V.V. and D.B. Elkonin, who scientifically substantiated that theoretical thinking and reflective thinking can be developed by organizing the educational process on the basis of collaboration. These ideas play an important role in explaining the socio-psychological aspects of developing constructive thinking through group work in technological education[14].

Modern pedagogical literature also pays great attention to the issue of using group work in technological education. I.YA. Lerner and M.N. Skatkin emphasize that problem-based instruction and creative assignments in education increase students' intellectual activity. In technological education, group project work and creative tasks develop students' abilities to think independently, make decisions, and solve practical problems.

Psychological studies have specifically noted the importance of motivation, emotional support, and social relationships during group work. In the works of B.G. Ananev and A.V. Petrovsky, it has been scientifically established that engaging in group activities positively influences an individual's cognitive and social development. Such an environment fosters trust, initiative, and constructive communication among students, making the thought process more effective.

The analysis of the above literature shows that although the problem of developing constructive thinking through group work in technological education has been extensively studied from pedagogical and psychological perspectives, a systematic study of its socio-psychological mechanisms remains relevant. In particular, developing effective models for using group work in technological education is of scientific and practical importance.

1. The interpretation of the concept of constructive thinking in psychology and pedagogy.

Constructive thinking is expressed as an individual's ability to understand and analyze problematic situations, set goals, develop effective solutions, and evaluate the results. In psychological literature, constructive thinking is considered a higher level of an individual's thinking, which develops in an integral connection with creative and critical thinking. In the process of constructive thinking, an individual adapts existing knowledge to new situations, compares alternative solutions, and makes the most appropriate decision.

In the early school years, the formation of constructive thinking is closely linked to academic activities, and during this period, there is a transition from the concrete-imaginative form of thinking to the logical-operational form. Therefore, organizing the educational process based on practical

activity and social interaction is considered an important psychological condition for the development of constructive thinking[15].

4. Mechanisms for Developing Constructive Thinking Through Group Work in Technical Education

In technical education, group work develops constructive thinking through the following psychological mechanisms:

First, the mechanism of social interaction. Interaction, the exchange of ideas, and debates within the group increase students' cognitive activity.

Second, the motivational mechanism. During group work, students' intrinsic motivation, desire for self-expression, and aspiration for success are strengthened.

Third, the reflective mechanism. By analyzing the results of their work in the group, students realize their mistakes and improve their future activities.

These mechanisms contribute to the systematic development of constructive thinking.

5. The teacher's pedagogical and psychological role during group work

In technology education, the effectiveness of group work depends in large part on the teacher's pedagogical skill and psychological approach. The teacher plays the role of an organizer, guide, and motivator for the group activity.

The teacher's main tasks include:

- psychologically forming the group;
- creating a positive psychological environment among the students;
- Ensuring the active participation of each student;
- Asking questions and giving assignments that encourage constructive thinking.

This approach creates conditions for students to fully realize their potential.

**6. The Outcomes of Developing Constructive Thinking Through Group Work**

Research and analysis of pedagogical practice show that the effective use of group work in technology education leads to the following results:

- The level of constructive thinking in students increases;
- Social activity and a culture of communication are developed;
- A creative approach to problem situations is developed;
- Teamwork **and decision-making skills are strengthened.**

These results indicate the need to further enhance the socio-psychological potential of technological education.

Based on the above analysis, it can be stated that developing constructive thinking through group work in technological education is an effective pedagogical tool that ensures the intellectual, social, and psychological development of students. Group activities transform the educational process into an active, creative, and collaborative environment, helping to shape students into individuals who meet the demands of modern society**.**

**Conclusion:** The results of this study showed that developing constructive thinking in students through group work in the technological education process is of significant pedagogical and psychological importance. Based on a review of scientific literature and theoretical-methodological approaches, constructive thinking was defined as an individual's ability to approach problematic situations consciously, purposefully, and creatively. It was determined that this type of thinking develops in technological education in conjunction with practical activity and social interaction.

The study demonstrated that the practical orientation of the technological education content contributes to the development of constructive thinking components, such as analysis, planning, decision-making, and result evaluation, in students. In particular, it was determined that educational activities organized through group work enable increasing students' cognitive activity, encouraging independent thinking, and enriching their social experience.

Analyses have shown that during group work, processes of cooperation, communication, and collective decision-making among students are activated. This strengthens the socio-psychological foundations of constructive thinking and fosters in students social responsibility, mutual trust, and teamwork skills. At the same time, group work enhances students' intrinsic motivation and fosters a positive attitude toward the learning process.

Research findings have shown that the teacher's pedagogical and psychological role is crucial in ensuring the effectiveness of group work. The teacher's properly organized guidance, psychological support, and methodological approach aimed at developing constructive thinking proved to be a crucial factor in ensuring students' intellectual development.

Overall, it was scientifically established that developing constructive thinking through group work in technology education is an effective pedagogical system that ensures students' intellectual, social, and personal development.

**References**


1. L. S. Vygotsky, Myshlenie i rech' [Thinking and Speech]. Moscow, Russia: Pedagogika, 1982.
2. J. Piaget, Rech' i myshlenie rebenka [The Language and Thought of the Child]. Moscow, Russia: Pedagogika, 1994.
3. A. N. Leontiev, Deyatel'nost'. Soznanie. Lichnost' [Activity, Consciousness, Personality]. Moscow, Russia: Politizdat, 1975.
4. P. Ya. Galperin, Vvedenie v psikhologiyu [Introduction to Psychology]. Moscow, Russia: Moscow State University, 1985.
5. V. V. Davydov, Problems of Developmental Learning. Moscow, Russia: Pedagogika, 1986.
6. D. B. Elkonin, Psychology of Teaching Primary School Children. Moscow, Russia: Prosveshchenie, 1974.
7. I. Ya. Lerner and M. N. Skatkin, Metody obucheniya v sovremennoy shkole [Teaching Methods in the Modern School]. Moscow, Russia: Prosveshchenie, 1982.
8. B. G. Ananyev, Man as a Subject of Cognition. Leningrad, USSR: Leningrad State University, 1968.
9. A. V. Petrovskiy, Personality. Activity. Collective. Moscow, Russia: Politizdat, 1982.
10. S. L. Rubinstein, Fundamentals of General Psychology. Moscow, Russia: Pedagogy, 1989.
11. N. F. Talyzina, Management of the Knowledge Acquisition Process. Moscow, Russia: Moscow State University, 1984.
12. A. K. Markova, Formation of Learning Motivation. Moscow, Russia: Prosveshchenie, 1990.
13. Yu. K. Babansky, Optimizatsiya protsessa obucheniya [Optimization of the Teaching Process]. Moscow, Russia: Pedagogika, 1982.
14. J. Dewey, Democracy and Education. New York, NY, USA: Macmillan, 1916.
15. D. W. Johnson and R. T. Johnson, Cooperation and Competition: Theory and Research. Edina, MN, USA: Interaction Book Company, 1989.