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Improving the Formation of a Culture of Thinking among Students

Erlepesova Khadisha Khudaybergenovna
Teacher at the Department of General Pedagogy and Psychology, Nukus State Pedagogical Institute

Abstract: Nurturing a personal culture in the learning process is defined as a strategic task of higher education. At the same time, the formation of an individual's culture of thinking as the basis of his general culture is a prerequisite for the comprehensive development of the individual.

Keywords: training of future teachers, pedagogical specialties, culture of thinking, structural components, pedagogical tasks, teaching technology.

Relevance of the topic: The issue of developing a culture of professional thinking among students was considered in the work of M. Hartner-Tiefenthaler, K. Roetzer, G. Bottaro, M. F. Peschl[1]. The authors believe that preparing students for future professional activities implies the acquisition of professional skills and the formation of a culture of professional thinking.

L. R. Khaliullina in her study notes that the formation of highly qualified specialists with a developed culture of thinking is one of the strategic guidelines for the modernization of higher education. The results of the study showed that the development of a culture of thinking depends on the orientation of students' thinking towards processing the educational information received, their subjective attitude to tasks, and mastery of logical operations[2].

In the work of A. V. Maltese, A. Simpson, A. Anderson, the features of the formation of a culture of thinking in students, necessary for introducing them to mental activity, are analyzed. The authors believe that in the learning process a culture of thinking should be developed in students in order to teach them to think[3].

In terms of our research, the study by S. E. Msondel and J. V. Aalst, aimed at studying the thinking abilities of students, is of particular interest. The work examines the ways of connections between the ability to think, analyze and study material, as well as the possibilities of academic disciplines that help develop the thinking abilities of students. The study authors believe that the effective use of discussion forums in online learning settings can improve social interaction, thinking skills, and academic performance[4]. Вопрос влияния дискуссий на развитие уровней мышления, процесс стимулирования более высокого уровня мышления

[1] Hartner-Tiefenthaler M., Roetzer K., Bottaro G., Peschl M. F. When relational and epistemological uncertainty act as driving forces in collaborative knowledge creation processes among university students // Thinking Skills and Creativity. – 2018 – Vol. 28 – P. 21–40.
[2] Khaliullina L. R. Psychological and pedagogical foundations of undergraduates' research thinking development process // Procedia – Social and Behavioral Sciences. – 2017 – Vol. 237 – P. 1405–1411.
[3] Maltese A. V., Simpson A., Anderson A. Failing to learn: The impact of failures during making activities // Thinking Skills and Creativity. – 2018 – Vol. 30 – P. 116–124.
[4] Msonde S. E., Aalst J. V. Designing for interaction, thinking and academic achievement in a Tanzanian undergraduate chemistry course // Educational Technology Research and Development. – 2017 – Vol. 65, Issue 5 – P. 1389–1413.

студентов также изучался в работах A. C. Alonzo, J. Kim[5], P. Shafto, N. D. Goodman, T. L. Griffiths[6].

Thus, the issue of forming a culture of thinking among students in the present period is considered one of the most significant problems of pedagogical science. Consequently, the tasks of creating a culture of thinking should be reflected in the content of university training for students of pedagogical specialties, in particular in the possible introduction of teaching technology for solving pedagogical problems. The problem arises of substantiating and testing the technology of teaching solving pedagogical problems aimed at developing a culture of thinking among students.

The purpose of the study is to identify the characteristics of the formation of a culture of thinking among students through solving pedagogical problems.

Main part.

To identify the development of a culture of thinking among students, we identified the following criteria:

- professional orientation of the personality of the future teacher;
- possession of pedagogical and logical knowledge;
- mastery of techniques and methods of mental activity;
- introspection, self-esteem and self-correction of mental activity.

The professional orientation of the personality of the future teacher was determined by the following indicators:

- positive attitude towards the future profession; desire to develop intellectual abilities;
- a sustainable desire to master professional and ethical standards.

Possession of pedagogical and logical knowledge was determined by the following indicators:

- focus on understanding systemic knowledge;
- knowledge of categorical structures of thinking;
- systematic knowledge about the culture of teaching work.

Proficiency in techniques and methods of mental activity was determined by the following indicators:

- ability to identify intersubject and intrasubject connections;
- ability to plan and solve pedagogical problems;
- application of rules and methods of mental activity.

Self-analysis, self-esteem and self-correction of mental activity were determined by the following indicators:

- desire for self-realization and self-organization in teaching activities;
- appropriate analysis of sociocultural actions;
- self-assessment and self-correction of the results of professional and cognitive activity.

Results and analysis of the study.

The key concept within the problem under study is the concept of “culture of thinking”. A culture of thinking is defined as an integrative quality that manifests itself at the motivational,

[5] Alonzo A. C., Kim J. Affordances of video-based professional development for supporting physics teachers' judgments about evidence of student thinking // Teaching and Teacher Education. – 2018 – Vol. 76 – P. 283–297.
[6] Shafto P., Goodman N. D., Griffiths T. L. A rational account of pedagogical reasoning: Teaching by, and learning from, examples // Cognitive Psychology. – 2014 – Vol. 71 – P. 55–89.

mental, activity and emotional-evaluative levels and is recognized as an individual result [4]; as an integral system of knowledge, skills, abilities and value orientations formed in educational activities, serving as a means of understanding actions and making decisions in any field [5]; as the ability to learn, generalize, accumulate experience and adapt to changing circumstances, which determines the effectiveness of the process of receiving and processing information [6]; as an integral education, which is a complex of professionally significant values, ways of thinking that develop in a person in the process of professional training and allow a specialist to plan professional activities at the technological level by solving professional problems [7].

Analysis of various approaches to the essence of a culture of thinking made it possible to define it as a systemic formation, including a set of motivational-need attitudes, professional and value orientations, reflective skills, integrative characteristics of thinking, manifested in individual-personal, professional-cognitive, sociocultural components [8].

The key to the success and efficiency of the process of forming a culture of thinking among students is a technological approach to it. Taking this into account, a technology was developed for teaching solving pedagogical problems aimed at developing a culture of thinking among students (Figure 1).

The technology involves the implementation of three successive stages:

- preparatory stage (development of interest in solving pedagogical problems; formation of conviction in the need to master the logic of isolating and solving pedagogical problems);
- theoretical stage (mastery of pedagogical and logical knowledge; formation of ideas about the key elements of activity; formation of the concept of pedagogical activity);
- practical stage (modeling of key components of activity in solving pedagogical problems; solving multi-level pedagogical problems).

It is worth noting some features of the formation of a culture of thinking among students through solving pedagogical problems: stage-by-stage formation (1st stage - 1st-2nd year; 2nd stage - 3rd year; 3rd stage - 4th year); content of the teacher's activity (diagnosis of the level of formation of the culture of thinking of students; determination of sources of knowledge, principles, criteria that determine the content side of the process of formation of a culture of thinking; development of a system of pedagogical tasks; assessment and correction of the level of formation of the culture of thinking of students); content of the student's activity (awareness of the professional significance of the formation of one's own culture of thinking; perception and assimilation of logical, pedagogical knowledge; assimilation of methods for solving pedagogical problems; independent identification of logical errors in explaining pedagogical phenomena and processes).

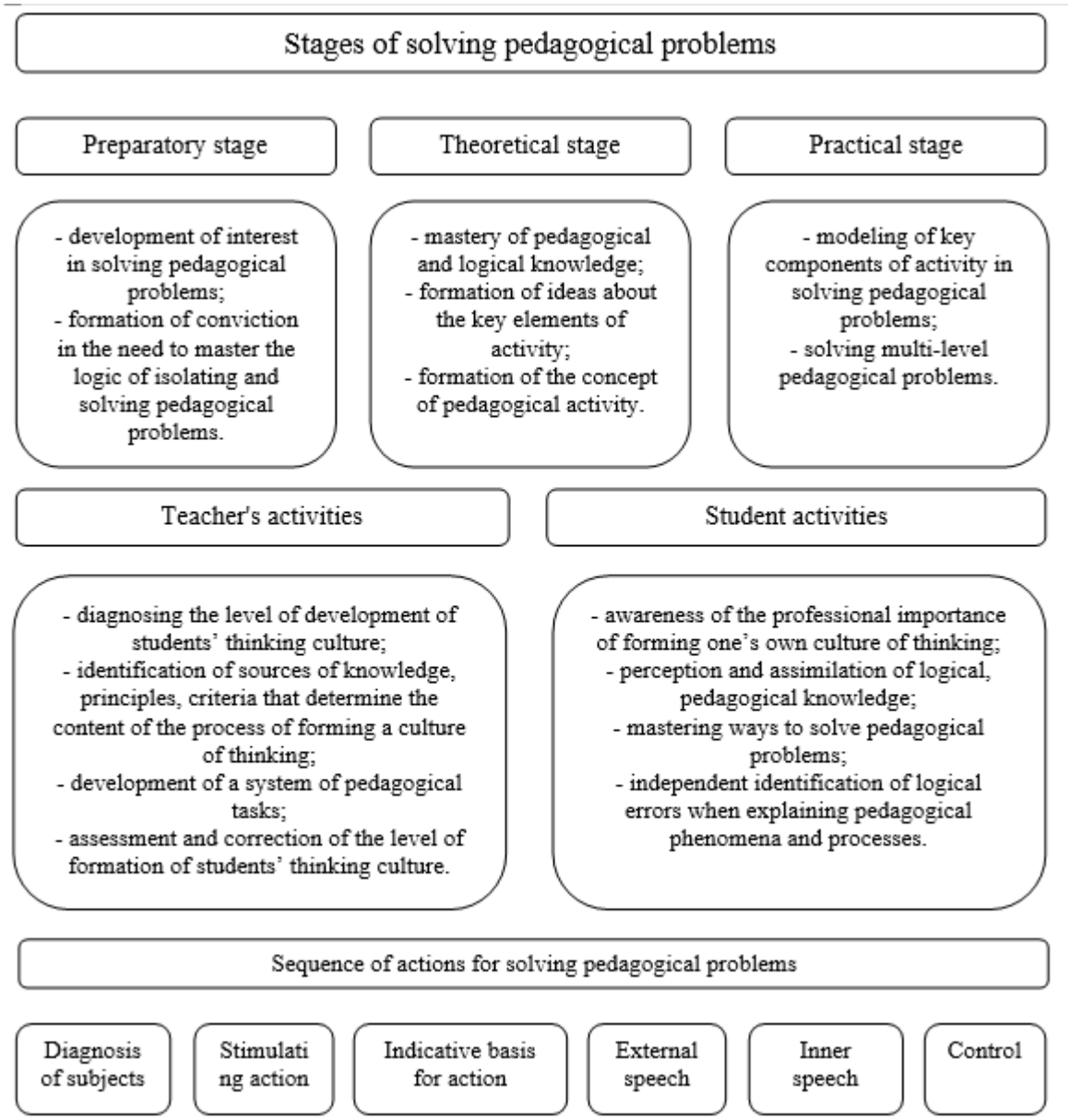

Figure 1. Technology of teaching solving pedagogical problems aimed at developing a culture of thinking among students

The developed technology assumes compliance with the sequence of actions for solving pedagogical problems:

- diagnostics of subjects (taking into account the real educational capabilities of students, peculiarities of thinking, pace of work);
- stimulation of actions (formation of positive motivation for learning, use of external and internal incentives);
- indicative basis for action (instructing students);
- external speech (conducting a didactic conversation together with students on mastering the content of the action);
- inner speech (the student's independent desire to use the previously known indicative basis of action in solving new pedagogical problems);
- control (analysis of the results obtained).

A comparative analysis of the results obtained allows us to say that graduates are experiencing an increase in the level of formation of a culture of thinking. This fact is explained by the

introduction into the process of studying pedagogical disciplines of teaching technology for solving pedagogical problems, aimed at developing a culture of thinking among students.

Conclusion:

Generalization and analysis of the study allows us to draw the following conclusions:

- analysis of various approaches to the essence of a culture of thinking made it possible to define it as a systemic formation, including a set of motivational and need-based attitudes, professional and value orientations, reflective skills, integrative characteristics of thinking, manifested in individual-personal, professional-cognitive, sociocultural components;
- the developed technology for teaching solving pedagogical problems aimed at developing a culture of thinking among students includes preparatory, theoretical and practical stages; content of teacher and student activities; sequence of actions to solve problems.

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