

THE PERSPECTIVES OF BRAINSTORMING TECHNIQUE IN THE DEVELOPMENT OF STUDENTS' PROFESSIONAL-CREATIVE SKILLS

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Abstract:

The paper focuses on the perspectives of brainstorming technique in the development of students' professional-creative skills during the process of professional becoming taking into account the objective social and professional needs of future specialists. The purpose of the paper is to analyze the benefits and perspectives of brainstorming technique in the development of students' professional-creative skills. The author presents the main steps of this technique, which provides a feedback between the teacher and the student and develops students' professional-creative skills.

Key words: brainstorming, professional-creative skills, professional becoming, motivation, personality resources.

1. Introduction

One of the activities of higher education establishments is a professional training of the graduate. This explains the need for the implementation in universities of a new, broader approach to professional education and requires special attention to the formation of professionally-creative skills of future specialist. A well-educated, intelligent and creative person, who wants to become future specialist, needs to be able to effectively communicate in non-native speaking technologies and to be able to be promoted in career.

Having analyzed the current state of higher education, we concluded that in the conditions of modern scientific and technological revolution there is a gap between the historical tradition of learning in higher education and the needs of society. In the content of the modernization of the professional education system, a transition to the use of modern methods and technologies of training aimed at continuous development

and improvement of creative thinking, skills and motivation, identification and formulation of problems. The creation of new knowledge aimed at their solution.

That is why it is necessary to use such learning techniques that would help students to develop not only their knowledge but also their professional-creative skills. In our opinion, the acmeological approach is the best choice, because students have the possibility to learn both academic material and develop interpersonal skills.

2. Analysing the most recent publications and highlighting unsolved problems

One of the the best solutions for these problems is a training process formation with the support of acmeology theory (Ribnikov N, Bodalev A, Ananov B, Derkach A, Kuzmina N, Zimnyaya I and others).

In the pedagogical theory and practice, the techniques in the development of students' professional-creative skills have not been researched yet.

That is why the purpose of this article is to analyze the benefits and perspectives of brainstorming technique as a discursive form in the development of students' professional-creative skills.

3. Research on the topic

Professional and creative capabilities of future specialists of higher education must be built on a model based on the specialist's productive functions and generalized tasks of his activity.

Professional and creative capabilities of future specialists include: developed engineering thinking; valued points and humanistic orientation; creative work and mastery; readiness to self-development and self-perfection; high professionalism.

We would like to say that realization of acmeological approach will provide a strengthening of professional motivation, a stimulation of students' creative potential, a revelation and a fruitful use of personality resources for the achievement of success with professional activity by means of forming of acmeological orientation of personality (Derkach A., Markova A., Reva G. and others). "Acmeology of education investigates the conditions of achievement of high quality of the educational systems, development

of subjects of educational process and is oriented on psychology of development of personality in educational and professional activity" [1, c. 96]. "Present educational establishments play a polyfunctional role in the development of man and society and can provide high quality of education, if they will function as multidimensional models operating in a spirit of a social order [2, c. 10].

The acmeological approach to the investigated problem gives an opportunity to understand the essence of professional mobility that is unreserved narrow specialization, and allows an engineer to be oriented in the wide circle of questions. It also provides social and professional mobility of personality, active self-development, productive realization of creative potential in professional activity and achievement. The future specialist must have such abilities that will help him to react operatively to constantly changing social and professional situations: versatile open mind, helping to accept new views, ideas in life; ability to realize a freedom of choice; ability to estimate possibilities, objective knowledge; readiness for self-development; aspiration to the achievement of success.

The quality results of education and socio-cultural competence can be attained by different methods and approaches among which there are acmeological technologies, such as interactive work in a group and training of practical abilities. Another learning technique is brainstorming as a discursive form.

For the purpose of formation of students' cognitive interest in the acquisition of knowledge in the use of professional-creative skills in engineering, a practice session "My path of professional development as a future engineer was organized.

The formation of future engineers' professional-creative skills was conducted through the content of the special course "The formation of future engineers' professional-creative skills on the basis of the acmeological approach" The aim of the course was the formation of future engineers' professional-creative skills as well as receiving the skills and abilities to solve complex engineering problems.

In the implementation process of the course there were lectures, which presented a system of representations of concepts, methods and approaches for the formation of engineers' professional-creative skills, practical classes, the purpose of which was to

consolidate their knowledge and practical testing to develop a strategy for the preparation of teaching provision and teaching techniques of the future engineering activities. Independent work was also performed, which included a review of selected aspects of the theoretical material of the course, preparation on the subject for presentations at seminars and conferences. During the independent work, students studied the individual topics of the content module and engineering tasks were developed. Most practical classes included brainstorming technique as a discursive form of creativity development.

Analysis of curricula and study programmes of technical universities indicated that students mostly receive theoretical training which is understood as the ability to use creative skills in solving inventive problems. The solution to this problem is applying the most effective techniques for the formation of a creative component. Each project team needs to solve creative task of Brainstorming. The main features of it are:

1. Method definition: collective creative method of generating an unlimited number of ideas with delayed criticism and analysis.
2. The idea of the method: a collective search of ideas, in which the process of generating ideas are separated in time from the process of their evaluation (criticism).
3. Recommended implementation steps: define the problem in basic terms, to allocate a single, Central point; not to declare wrong or to discontinue investigation of any of the proposed ideas; to pick up and develop the idea of any kind, even if its relevance (the possibility of implementation) seems doubtful or absurd; to provide support and encouragement needed to free the participants from the constraints; to conduct final evaluation and selection of ideas only after the session, with the help of a group of experts who, as a rule, not participate in the session.
4. Advantages of the method: high efficiency; the method is easy to learn, quite versatile and has a wide range of possible applications.
5. Disadvantages: the difficulty of being applied in solving specific tasks.

According to the results of group work, a report and a text of the oral report about creative task should be prepared. Then, the best ideas are selected and their advantages are described, a sketch or a drawing created project based on the ideas is compiled.

According to the results of academic work and after solving creative problems in groups, students are required to obtain certain professional competence, which, in particular, include the following:

- the ability to organize the required minimum set of professional knowledge of engineering to solve the task;
- the ability to organize their knowledge in the field of methods of logical thinking and geometric reasoning;
- the ability to reasonably report the obtained results and the ability to listen, analyze and understand the results of their colleagues.

The main criterion of success of a student with this organization for solving creative problems is its professional adaptation in the conditions of collective action and successful implementation of its role in creative problem solving. It is very important for future engineer, as engineering work is difficult. “Engineering curricula starts out as a collection type, with strongly classified traditional science and mathematics subjects. Over time, and dependent on the curriculum design, “engineering” subjects specific to a particular specialization are added” [3, с. 88].

4. Conclusion

In conclusion, it should be noted that there are strong reasons for integrating the teaching of all skills. Professional-creative skills and abilities are needed by future specialists to solve complex professional problems. The formation of future engineers’ professional-creative skills was conducted through the content of the special course applying the creative tasks of Brainstorming. The brainstorming technique helps one examine a topic from various viewpoints and decide on the ideas to include in the essay.

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