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ПСИХОЛОГІЧНЕ ЗАБЕЗПЕЧЕННЯ ОРГАНІЗАЦІЇ ГРУПОВОЇ ФОРМИ ТЕХНОЛОГІЇ ПРОЕКТНОГО НАВЧАННЯ У ВНЗ

Анотація

У статті представлено модель організації групової проектної діяльності студентів, яку покладено в основу психологічного забезпечення групової форми технології проектного навчання у ВНЗ. Технологія проектного навчання - це система навчання, в якій студенти набувають знання і уміння у процесі планування та виконання практичних завдань – проектів, що поступово ускладнюються, і яка поєднує алгоритм проектної діяльності та систему методів і засобів, що забезпечують її ефективне здійснення. Групова форма навчальної проектної технології є її різновидом і здійснюється у вигляді спільної навчальної діяльності малих груп, що передбачає вироблення їх учасниками єдиної мети, спільної програми дій, розподіл завдань і ролей, спільний результат, взаємодію. Дана модель дає можливість на основі врахування соціально-психологічних чинників створювати на кожному її етапі сприятливі психологічні умови для підвищення ефективності групової проектної діяльності. Модель перевірена в ході психолого-педагогічного дослідження, яке довело адекватність запропонованих заходів зі створення психологічних умов групової проектної діяльності та дає підстави рекомендувати дані заходи викладачам-координаторам проектів з різних дисциплін.

***Ключові слова**: технологія проектного навчання, групова проектна діяльність, модель, ефективність діяльності, взаємодія, мала група, студенти.*

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ПСИХОЛОГИЧЕСКОЕ ОБЕСПЕЧЕНИЕ ОРГАНИЗАЦИИ ГРУППОВОЙ ФОРМЫ ТЕХНОЛОГИИ ПРОЕКТНОГО ОБУЧЕНИЯ В ВУЗЕ

Аннотація

В статье представлена модель организации групповой проектной деятельности студентов, которая легла в основу психологического обеспечения групповой формы технологии проектного обучения в вузе. Технология проектного обучения – это система обучения, в которой студенты получают знания и умения в процессе планирования и выполнения постепенно усложняющихся практических заданий – проектов, объединяющая алгоритм проектной деятельности и систему методов и способов, обеспечивающих его эффективность. Групповая форма учебной проектной технологии является ее разновидностью и осуществляется в виде совместной учебной деятельности малых групп, что предполагает выработку ее участниками общей цели, совместной программы действий, распределение заданий и ролей, общий результат, взаимодействие всех участников. Данная модель дает возможность, с учетом социально-психологических факторов, создавать на каждом ее этапе благоприятные психологические условия для повышения эффективности групповой проектной деятельности. Модель была проверена в процессе психолого-педагогического исследования, которое доказало адекватность предложенных средств по созданию психологических условий групповой проектной деятельности и дает право рекомендовать эти средства преподавателям-координаторам проектов по разным дисциплинам.

__Ключевые слова__: технология проектного обучения, групповая проектная деятельность, модель, эффективность деятельности, взаимодействие, малая группа, студенты.

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PSYHOLOGICAL SUPPORT OF THE GROUP FORM ORGANIZATION OF THE PROJECT EDUCATION TECHNOLOGY AT HIGHER EDUCATIONAL ESTABLISHMENTS

Summary

The article presents the model of organizing the group project activity of students, which is laid as the basis of the psychological support of the group form of the project education technology at higher educational establishments (HEE). The project education technology is a system of education, in which the students acquire knowledge and skills in the process of planning and implementation of practical tasks - projects that gradually become more complex, and which combines the algorithm of the project activity and the system of methods and tools that ensure its effective implementation. The group form of the educational project technology is its variety and is carried out in the form of joint training activities of small groups that provide the development by their participants of the common goal, a joint action program, the distribution of tasks and roles, the common result, and interaction. This model makes it possible by taking into account the social and psychological factors to create at each stage of the group project activities the favorable psychological conditions to improve their effectiveness. The model was tested in the psychological and educational research that proved the adequacy of the proposed measures to create the psychological conditions of the group project activities and allows recommending these measures for teachers-coordinators of projects of various disciplines.

Keywords: project education technology, group project activities, model, effectiveness of activities, interaction, a small group, students.

Formulation of the problem. The current stage of higher education development is characterized, above all, by the change of priority in favor of the pedagogical technologies to the content of training related to the implementation of educational innovations, and which thus increase the efficiency of the educational process. Therefore, the question of psychological support for innovative technologies,

which also include the project-based learning technology, is today a very urgent task. However, the research types aimed at solving the issue are not enough.

Analysis of the recent research and publications. According to L. Davis, who reveals the concept of technology in the broad sense through the analysis of engineering design, the technology is a combination of qualification skills, equipment, infrastructure, tools and relevant technical knowledge being necessary to implement the desired changes in the materials, information or humans (presented according to: [25, p. 54]). Technologies that most meet your objectives are: training in cooperation, "Portfolio of a student", and a project method.

In the humanitarian field there are also used the psychological, or psychosocial technologies, which are the main component of the practical psychology and regarded as an effective tool of the teaching (L.M. Korobka [9]), organizational (L.M. Karamushka [25]) and other branches of psychology. The psychological technology is an integral methodical system aimed at solving certain psychological problems.

The methodological bases of the technological approach regarding the project activities are presented in the works [1; 4; 20; 21] and others. In this approach there are considered, for example, issues such as the teacher training of higher educational institutions to design educational technologies (G.M. Romanova [20]).

Innovative methods and technologies are also implemented in the study of psycho-pedagogical disciplines at higher educational institutions of non-teaching areas. Thus, in the department of psychology and pedagogy of the State Higher Educational Institution "Vadym Hetman Kyiv National Economic University" there is introduced into the process of organizing the psychological and educational training (PET) of students the technology of individual and cooperative study developed by V.A. Kozakov and co-authors. The technology is based on a combination of the independent individual and group (consisting of small groups) work of students at workshops by using the active learning methods (ALM): discussions, small groups, brainstorming, narrative-role and business games, presentations, case studies, etc. [7].

The theoretical and methodological bases of the pedagogical designing and

project activities are contained in the works of many local [13; 15; 18; 22; 6; 17] and foreign [3; 16; 5; 8; 14; 19; 23; 24] researchers. The approaches to organizing group projects in the university education of humanitarian sphere are covered in the publications [2; 4; 10; 16; 26-28], etc.

The problems of design and project activities in the national psychology were studied in the following areas: the principle of design as a system creating factor of personality mental life in the genetic-modeling approach (S.D. Maksimenko) [13], the systematic and strategic approach to the study of the process of the scientific and technical work, especially, the engineering and designing activity (V.O. Molyako) [18], the designing of modern remote self-development environments (M.L. Smulson) [22], the technology of psycho-pedagogical designing of the personality social development of gifted students (V.O. Kyrychuk) [6], etc.

There is devoted little attention to the problems of the group project activities of students in the psychological and pedagogical literature. Among the recent studies of the pedagogical science affecting the characteristics of the group project activities in the form of cooperative student projects one can specify the publications by J. David, R. Johnson and D. Johnson, Ch. Myers, T. Jones [26-28] (given under [16]), in the form of educational and research student projects – O.A. Bulavina [2].

In the previous publications we have specified the essence of the concept of the group project activity, the notion of efficiency of the group project activity and its performance has been developed [10], and the results of the empirical verification of the program on efficiency upgrading of the group project activity were shown [11]. We consider it appropriate to continue studying the problems of the group project activity in terms of the psychological support of the integrated project technology.

The purpose of the article *is* to highlight the program of psychological training of students of economic specialties for the group project activities in the psychological and pedagogical training, which is a practical tool for the psychological support of the project technology at higher educational establishments.

The explanation of the main material and research results. Based on our theoretical analysis we specified the features of the group project activity (GPA) as a

complex multidimensional and poly-determined phenomenon and which: has a creative, productive nature; its contents are taking joint decisions when solving a specific problem, the solution of a number of interrelated tasks, the creation of new ideas and objects embodied in the common product; it combines the basic activities (games, training, communication), various forms of the activity – thinking, intellectual (creation of a mental image and prototype) and practice-effective, or applied (implementation of various types of activities designed to implement project ideas - search, research, creative, organizational, etc.), by way of organizing it's a joint activity.

From our point of view, the **project training technology** is *a system of education in which students acquire knowledge and skills in the planning process and the implementation of practical tasks - projects that gradually become more complex, combining the algorithm of project activities and the system of methods and tools to ensure its effective implementation.*

The group form of the educational project technology is its variety and is carried out in the form of joint training activities of small groups that provide the development by their participants of the common goal, a joint action program, the distribution of tasks and roles, the common result, and interaction.

In the course of our study it was confirmed that a successful psychological means to enhance the efficiency of the group project activity is to train the development of psychosocial and creative design skills that can be included to the project training technology [12].

The overall objective of the training is to learn to control psychological factors during the use of project-based learning technologies in the professional training of students of economic specialties.

According to our research conducted during 2006-2012 at KNEU there were determined the psychological factors exercising a significant influence on the group project activities: motivation to the group project activity (GPA) and the level of knowledge about its characteristics, the combination of some individual psychological properties of members of small groups (temperament, way of thinking, locus of control), the development level of creative-projective and social skills of the interaction between participants (communicative organization, the ability to take joint

decisions, etc.) as well as the social and psychological processes in teams (cohesion and psychological atmosphere of small groups). The studies have shown that these factors focused on their targeted managing turn in psychological conditions. Thus, the psychological conditions of organization of the group form of the project technology include: 1) the development of motivation to the GPA and the methodological training to increase the level of knowledge about its characteristics, 2) completing in a certain way small groups, including participants with the various individual psychological characteristics, 3) the psychological preparation of students for the GPA.
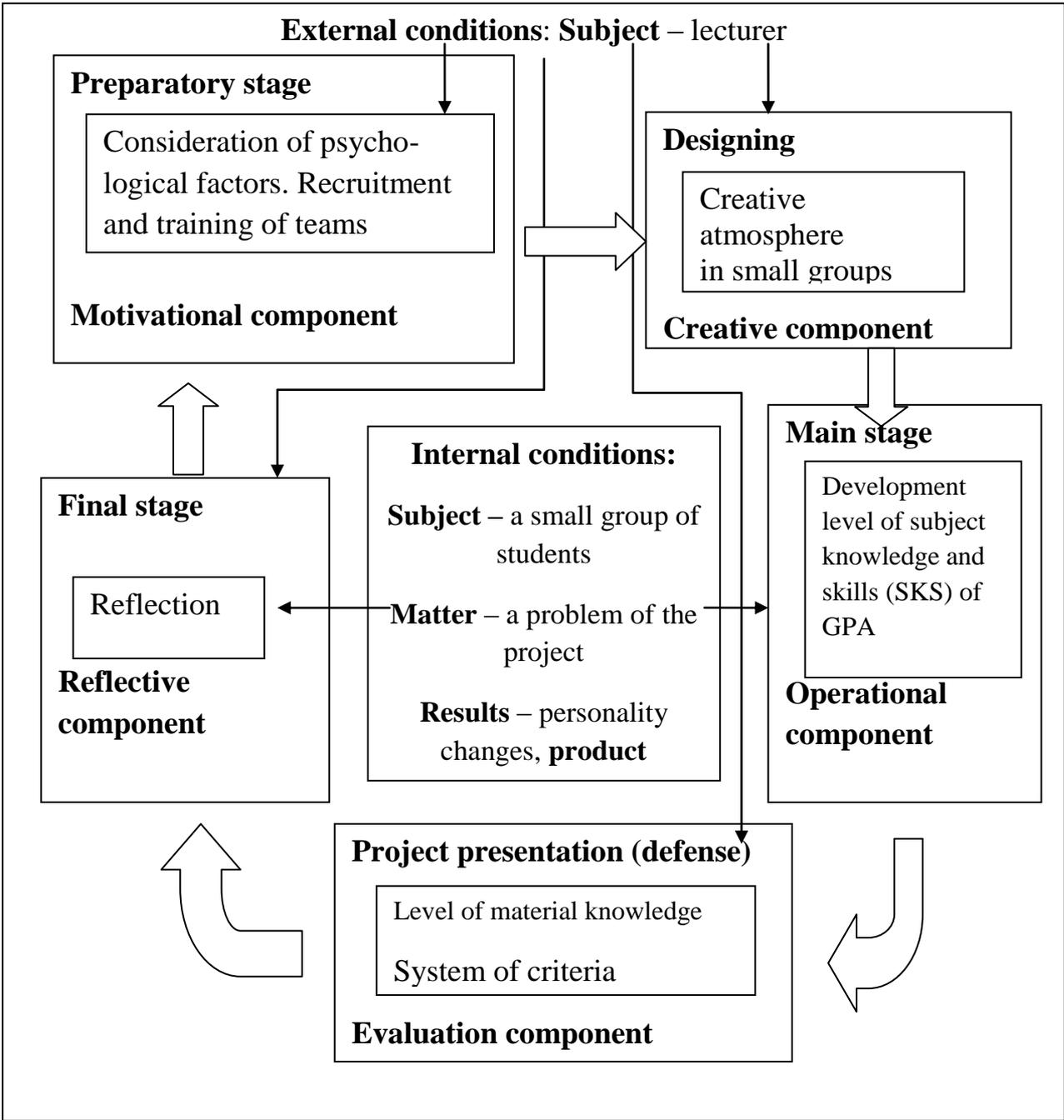

Fig. 1. **Structural and algorithmic model of students' GPA organization**

Based on these results we suggested a model of organization of the group project activity at higher educational institutions by taking into account the social and psychological aspects of interaction between members of small groups under which it is performed (Fig.1).

As the basis of the model of the group project activity organization at universities are put by us the theoretical concepts describing it as *joint efficient creative* activities of students in small groups. The proposed model of the group project activity organization is a modeled relationship between the GPA algorithm, its structural, organizational components and the psychological conditions that affect it. The model contains the main stages of the project group activity with the algorithm of actions of the teacher and small groups on each of them.

The main structural components of the model included: subjects (small teams and a teacher-coordinator of projects), a discipline, the process, conditions, and the result (product) of activity. The central element of the model is the algorithm of the design activity comprising the stages of its implementation with a description of the content of actions at each stage of the teacher and small groups of students. It is an estimated base of actions, which consists of thinking operations and practical (executive) actions. We distinguish the following five stages: preparatory, design, basic, modeling (presentation), and reflective. The algorithm of the GPA is the *process* of the GPA with the reproduction of main meaningful actions at every stage.

During the study of the academic GPA we have highlighted such its organizational components: motivational-cognitive, interpersonal, creative, operational, evaluative, reflective, which roughly correspond to its main stages, which they determine most by helping or hindering the efficiency of the GPA. Motivational-cognitive and interpersonal components determine most the preliminary stage, on which the important psychological conditions are the development of motivation of students to the GPA and the level of their knowledge of its features as well as the completing of project teams by taking into account the individual psychological characteristics of participants and their preparation for the GPA. The

creative component corresponds to the design phase, on which a necessary condition is the creation of a creative atmosphere of joint activity and the development of a creative potential of the team for further productive activities, the development of a clear plan and program of actions as well as a quality product. The operational component identifies the main stage of the implementation of the GPA, on which an essential condition is the presence by members of subject knowledge and skills as well as various other skills, especially the important ones are communication, organizational and creative skills. The evaluation component determines the presentation stage, during which small groups defend their projects. At this stage an important condition of the activity efficiency is the development of clear criteria and procedures for evaluation. The reflexive component determines the final stage of the GPA, on which the integration of subject knowledge and skills as well as the internalization of experience take place.

The feature of our organizational model of the GPA of students is the inclusion in the learning process of the social and psychological determinant - training sessions – the socio-psychological training (SPT) on its preparatory stage, on which the psychological preparation for the GPA and the completing of teams take place. The training sessions help students develop psychosocial skills, enhance the level of interaction of small groups: their cohesion, creating in them a necessary creative atmosphere for a successful project activity. The plan of training sessions is given in Table 1. Duration – 3 hours.

Table 1

Module program

Training stage	Stage content	Durability (min.)
Introduction to the topic Theoretical part	Understanding the theoretical basics and practical results of project activities	20 min.
Practical part	The modeling of algorithm of design activity based on consideration of its psychological factors	Total time 2 h.40 min.
1. Preparatory phase of project activities	Creating a creative atmosphere to get started. Management of distribution for the teams and the choice of the project theme.	40 min.
2. Designing, development of the project program	Setting goals and objectives. Planning. Development of project maps, evaluation criteria and forms of control.	60 min.
3. Presentation of the project programs	Presentation by teams of programs of group projects and their evaluation	40 min.
4. Final stage	Reflection classes	20 min.

Based on the research of psychological conditions of the GPA we offer to teachers-coordinators of projects some recommendations on its organization in each of the main stages to achieve greater efficiency.

1. On the future performance of the GPA the greatest influence is made by its preparatory and projecting stages. On the preparatory phase there is formed the motivation for the group project activity and laid the foundation of joint successful creative collaboration. At this stage there are several important points: 1) determining the level of preparedness of students for the group project activity and based on these data providing them with information on its features and taking the preparatory measures; 2) determining the level of motivation for the GPA and improving it in the event of a low level; 3) to help students in choosing project topics and distributing into small groups; 4) prepare students for the interaction; 5) establishing clear criteria for the evaluation of the project activity results.

To ensure the effectiveness of the GPA at this stage the following training exercises are offered.

Preparatory phase of project activities

Goal: create a favorable, relaxed, positive atmosphere for the group creative work by employing the associative creative thinking.

- *Exercise 1*. Heuristic-acquainted exercise aimed at the inclusion into the work of associative thinking.

- *Exercise 2.* Brainstorming aimed at determining the psychological factors of project activities.

- *Exercise 3.* Psychosocial exercise aimed at forming project teams by way of the interpersonal method.

- *Exercise 4.* Psychosocial exercise aimed at achieving the optimal division of roles and functions in a team.

2. According to the findings of our study, students, even many of those, who had earlier participated in the project activities, need to be motivated to the GPA. It is helpful to use these methods of motivation: evidence and conviction, delegation of

powers [20 p. 609-610], the organization of the competition between the teams on the best projects. Our experience gives reasons to believe that the organization of the project activities as a necessary logical component of the learning process with the allocation for this work type of a substantial number of points (10 to 20) is a good incentive to motivate. Unfortunately, the creative motifs occupy in the ranking of motifs for students the last place that's why within the psychological and pedagogical training we pay more attention to the development of creative reasons by using creative exercises.

3. It's better to shape small groups, given the mutual election of students around not very difficult and the most interesting topics selected from the thematic plan. To do this on a practical level it's expedient to hold a conversation during which the teacher with the students formulate some problems that exist in our life, and students choose a problem that disturbs each of them the most important. Then students are divided into small groups around the issue that interested them and formulate project topics designed to solve this problem according to the thematic plan. According to our research the teams formed by mutual choice around the topic that interested all have shown higher efficiency of joint activities, especially those that offered their topics.

Products of such projects may be, for example, the presentations in the program Power point, mini-movies, literary works, quests, etc..

4. Another important point on the preparatory phase is to discuss and establish evaluation criteria and the manner of future project presentations. Students have to know in advance what will be evaluated and what a benchmark of the high project activity results is. Each teacher sets its own requirements and evaluation criteria. We offer assessment criteria that were identified during our empirical research as performance figures and showed the relatively high correlation with the level of efficiency of the GPA.

- *Exercise 5*. Developing criteria for evaluating projects.

All participants discuss together and record the criteria by which the project applications will be evaluated. Examples of criteria are given in Table 2.

Table 2

EVALUATION CRITERIA OF PROJECT MAP PRESENTATION

Family name and first name of training participant, specialty, name of the team, which developed the project map _____ _____				
Evaluation criteria for project map presentation	Work assessment of other teams (due to 5-point scale)			Work assessment of own team
	Team A	Team B	Team C	
Validity of the problem and its relevance, feasibility, the significance of the theme				
Execution quality of the program (using visual image aids)				
Originality of ideas, presentation (level of creativity)				
Active participation of all team members				
Clarity of material presentation				
Overall presentation rating (sum of the above-mentioned criteria)				

5. We propose to use the design technology throughout the school cycle – from the first to the last years of study, including it into the structure of the main training content of the discipline. It is appropriate to implement this method in series in the system: from simple to more complex projects by building a logic of its use in the subject from specific topics to generalized thematic blocks according to the level of students' professional competences and psychosocial skills. Thus, in the first year you should take into account the recent adaptation period of training students in the relatively new environment where students only get acquainted with new ways and methods of training and each other. Therefore it is better to start with short-term (from 3 weeks to 2 months) background or creative projects. The undergraduate students are capable to carry out complex long-term, practice-oriented or research, subject or interdisciplinary and international projects. A more mature level of development of individual students and student groups as well as a certain gained

professional level of important knowledge and skills enable the group to complicate project activities by bringing together a group of people with different individual properties, different professions, and of different ages. Thus, teachers can directly participate in joint activities alongside with students. Topics in this case are elected due to research, applied, social interests and goals of vocational education.

6. At the design stage small groups begin to work independently. But since this stage of planning and setting goals is critical to achieving future results, teachers need to spend time on detailed discussion of draft maps, which are a kind of action plan. It's better to start putting them in the auditorium followed by completing them at home. Such maps in small groups are very actively compiled in a creative manner: on a large sheet of drawing paper using markers, drawings, applications and other creative tools.

Stage of designing, development by teams of project programs

Goal: learn how to develop applications (maps) of projects

- *Exercise 6.* Working in small groups. Development of project programs.

The visual image maps are developed in any art form, but its structure is clearly defined.

Here is the list of constituents of the project map:

Structure of the project map

1. Name of the project and the composition of participants.
2. **Justification of the problem** that can be solved as a result of the project implementation.
3. Formulating the main **goal** of the project.
4. List all the **tasks** of the project (what exactly needs to be done to ensure the main goal).
5. **Distribution of roles** and responsibilities in the group in accordance with the tasks (who is responsible for what, who does what).
6. **Product** description: that will be done in the project.
7. **Terms** and dates of each project task implementation.

8. Visual, technical **equipment** used in the project, the **resources** available (already available) and necessary (what is absent and needs to be found).

9. **Risks** (which may hamper the implementation of the project).

7. Also at the design stage time should be allocated for the distribution among members of roles and responsibilities under those one can perform the best. The students themselves do not always know what they can best - coordinate team's work, criticize shortcomings or produce original ideas.

The coordinator must help them.

8. Further, on the main stage of the GPA the students carry out project activities independently in extracurricular time. Often teachers tend not to interfere with the activities of students and do not help them believing that they have to decide themselves all the problems that arise. However, this is not so much due to the trust in mature positions of students, but due to inability of most teachers to solve social and psychological issues. Therefore, the coordination role of the teacher should be supplemented by his/her ability to influence the psychosocial component of the GPA, to create the positive and constructive atmosphere, to help resolve conflicts that may arise during interaction.

9. At the final stage the defense of projects and the reflection of performed activities take place.

Modeling stage of project activities

Presentation of project programs of teams

Goal: learn to present the results of the joint group project activities of teams, evaluate creative work.

- *Exercise 8.* Evaluation of projects.

Teams alternately represent their project programs (either the whole group or representatives of the group) as per structure shown in Table 4. At the same time each member assesses own work and the work of other teams using Table 4.

- *Presentation* of project programs by teams. The presentation structure is shown in Table 3.

Presentation structure of project programs

Stages	Average time (min.)
1. Introduction to the presentation: providing basic data on project participants, goal, objectives, and problems to be solved by the project.	5
2. Presentation of project program – presenting of the content of the future project to the audience.	15
3. Discussion of presentation, program evaluation	10
TOTAL	30

Another important condition of the effectiveness of the GPA is teacher's interest in the results of students, even if the results have not reached a high level. Very often the motivation of students is reduced: teachers' formal relationship with the method, too high or unclear requirements, too harsh criticism, lack of attention to the results, etc.. Only the teacher interested in the results and in the creative process is able to effectively organize this activity that is very complex in terms of organization, as a result of which the participants gain not only practical results and theoretical knowledge, but also enthusiasm for further mastering professional competences.

Final stage. Reflection of training results

Goal: analyze training results.

- *Exercise*: analyze training results in terms of formation by you of the readiness level to implement the educational project activity. Rate on the 10-point scale your willingness to implement educational projects:

0 _____5_____10

Findings. Thus, the research grounded the theoretical position that the group project activity at higher educational establishments is a joint creative activity of

subjects of the educational process in the form of small groups on which a significant impact is made by socio-psychological factors. The represented model of organization of the group project activity at higher educational establishments enables by taking into consideration these factors to create on each its stage the favorable psychological conditions to improve its performance. The model was tested in the psychological and educational research that proved the adequacy of the proposed measures to create psychological conditions of the GPA and allows recommending these measures to teachers-coordinators of the projects of different disciplines. The model was laid by us as the basis for the psychological support of the group form of the project activity technology.

Further investigations of this problem are aimed at improving the program of the socio-psychological training of future economists for the group project activities in the psycho-pedagogical cycle of subjects.

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