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The effectiveness of the project method in teaching humanitarian disciplines

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ABSTRACT

The purpose of this study was to identify the effectiveness of the project method as an innovative tool for the teaching of humanitarian subjects. The research used such methods as follows: questionnaire, observation, experiment, as well as statistical methods for data processing. In the course of the research, it was determined that the students who were engaged in the project activity, during the project, autonomously researched scientific, reference, educational, and methodological literature. A group of experts found that students' participation in project activities influenced the development of creative activity, and creative systemic thinking contributed to their self-organization. During the survey, it was determined that students' independent work on creating projects ensures the development of personal and functional components of self-organization. The research's scientific novelty lies in its exclusive focus on students studying humanitarian disciplines. The restricted scope of the experiment facilitated the identification of the project approach as such that it can be integrated into the academic system to enhance students' personal and practical proficiencies, thereby promoting their overall growth. Further research can be aimed at determining the effectiveness of using game methods in the course of teaching humanitarian disciplines.

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1. INTRODUCTION

Currently, the educational process calls for essential changes in the organization of education [1], [2], with the further perspective of enhancing practical and applied aspects that can be achieved by transforming methods of professional training, as well as shifting the training focus onto the formation of educators' practical skills [3]. The incorporation of crises into the educational process can be tailored to the training profile of prospective specialists, with varying methods and technologies. Moving forward, there will be a focus on

enhancing search skills within the educational framework, granting students greater autonomy in acquiring necessary information and solving issues related to professional challenges [4], [5].

A substantial bulk of scholars address the problem of enhancing pupils' engagement in independent work concerning complex topics associated with specialized disciplines. In order to professionalize education within a tertiary institution, it was established that an efficacious technique is an application-based methodology that closely mirrors vocational endeavors. Practice-based training involves the use of educational pedagogical scenarios, challenging professional tasks, and professionally-oriented technologies to cultivate practical expertise in future specialists [6], [7]. Regarding the practice-oriented activities utilized by prospective humanitarian specialists, their involvement in project creation aimed at independent student organizations for future professional endeavors is crucial. Thus, it can be inferred that implementing project-based methodologies holds significant relevance within higher education. This is particularly due to the pivotal role played by independent resource utilization during the development of communicative and professional competencies among aspiring professionals as they acquire new knowledge and skills for application in future careers [8]–[10]. Therefore, the principal aim of the project method is to provide future specialists with the opportunity to independently acquire knowledge while solving practical tasks or situational problems that require the rapid integration of knowledge from diverse educational domains. As far as the teachers are concerned, while implementing the project method, they assume the roles of both expert and coordinator to provide supplementary knowledge.

Given the above, the purpose of the research was to evaluate the efficacy of utilizing project-based learning in the study of humanities.in higher educational institutions. To achieve the set goal, the tasks were set as follows: i) determine the educators' degree of preparedness to facilitate instruction through project-based methodologies, ii) develop the experimental part using the project method in accordance with the educational program, and iii) to estimate the students' preparedness level for engaging in project-related tasks.

2. LITERATURE REVIEW

One of the hallmarks of societal progress is an elevation in educational standards. Moreover, one's drive to enhance their intellectual aptitude and competencies stems from possessing a crucial characteristic, namely the capacity for independent research and comprehension [11]. According to Abelha *et al.* [12], since contemporary society imposes new benchmarks for skilled professionals, individual subjectivity gains ever greater significance. This owes itself to enhanced accountability as well as mounting demands for self-improvement, initiative-taking, personal growth and achievement. Consequently, it becomes imperative to explore how learning methods can be transformed so as to empower students with the skills needed to independently seek out pertinent information and successfully apply it within personal or professional contexts [8]. The instruction of humanitarian subjects is primarily geared towards cultivating a humanistic mindset that aligns with the learners' values and priorities.

However, the traditional study of humanitarian disciplines has led to the isolation of teachers and students, namely limitations in learning and understanding the material due to imperfections in pedagogical systems [13], [14]. As the conventional approach to education primarily focused on teachers reproducing content, it resulted in inadequate development of critical thinking skills, motivation levels, and the capacity to effectively integrate concepts with practical application and collaborative group work among students [6]. Therefore, it was decided to apply and examine the project method during the study of humanities at higher educational institutions. In this sense, the study of humanitarian disciplines helps to form one's own worldview, moral and ethical value orientations, dialectical and analytical thinking, the ability to search and apply the acquired knowledge, and the ability for self-organization and self-development. In numerous cases, they facilitate the broadening of one's perspective and cultivate an enhanced knowledge base, which serves as a prerequisite for establishing effective personal and professional discourse [15], [16].

Hence, it is imperative to implement pedagogical strategies that foster student motivation and interest, underscoring the significance of studying humanities in our society. In order to achieve this objective, educators must devise dynamic approaches that enable students to actively engage with humanities and cultivate their curiosity towards them [17]. It should be mentioned that scholars emphasize the indispensability of utilizing active methodologies for teaching humanities, thus facilitating the effective acquisition of sophisticated terminology and encouraging creative thinking through research-based activities as a practical component of learning [18]. Additionally, in Dubrovina *et al.* [19] is underscored the importance of constructivist approaches in learning and teaching, which encompass collaborative work while emphasizing students' responsibility as active participants during their own learning process. One of these active methods is project-based learning, which is an indispensable tool when teaching humanitarian disciplines, studying and accumulating complex expertise, as it encourages students to work in groups with a clear understanding of the goal.

Researchers place great emphasis on the implementation of the project method in educational settings, as it serves as an exceptional didactic model for attaining essential objectives: becoming a proficient educator

and promoting substantial learning among students within academic programs [20], [21]. Consequently, the project method represents a versatile instructional instrument applicable to both teachers and educators [22]. The project-based approach facilitates the cultivation of a research-oriented and innovative learning environment in classrooms, thereby accommodating students with varying levels of knowledge, skills, and abilities while fostering their initiative. This method recognizes the unique characteristics of each student and augments their teamwork abilities, as well as equips them with decision-making proficiency for professional situations. The teacher endeavors to diversify the preliminary stages of planning by integrating personalized tasks that enrich creative aptitude and individual initiative among students, thereby broadening their scope for active learning and professional growth.

In a recent study [23] was examined the efficacy of the project method in a teacher's workflow. The researchers did not validate the effectiveness of this approach as the final results obtained from the experimental group were only marginally higher than those achieved by the control group. This suggests that other pedagogical factors could be at play. Nevertheless, other scientists in [24], while studying the impact of the project method in the discipline of "Industrial Chemistry" determined that the implementation of the project method significantly affects the learning of the experimental group.

Hence, it was decided to formulate two hypotheses as follows: i) implementation of the project method will not have a strong impact on the criteria: motivation, understanding of the material covered, interest in in-depth (independent) study of humanitarian disciplines (H0); and ii) after implementing the project method, students' engagement in studying humanitarian disciplines will increase, and the level of motivation and understanding of the material will be enhanced (H1).

3. METHOD

3.1. Research design

The experimental study was conducted during September - August 2022/2023 on the basis of higher educational institutions: Chernihiv Collegium National University named after T. G. Shevchenko; Communal Institution of Higher Education "Dnipro Academy of Continuing Education" of the Dnipropetrovsk Regional Council"; University of Regional Development and Banking Institute, AMBIS a.s. Vyská škola, Department of Security and Law. All stages of the study were consistent and met the necessary requirements for conducting the experiment. The relevant stages of the study are illustrated in Table 1.

Table 1. Research stages

Stages of the research	The time-frames of the stage
Stage 1:	September 2022–December 2022
1. Elaboration of a study program with the implementation of the project method and the plan of the experiment;	
2. Formation of pedagogical conditions for the acquisition of professional competences by students through using the project method;	
3. Determination of the initial formation level of students' professional competences.	
Stage 2:	February 2023–June 2023
1. Implementation of the project method in the educational process;	
2. Verification of pedagogical conditions for the effective functioning of the project method.	
Stage 3:	June 2023–August 2023
1. Determination of the project method effectiveness in achieving the set objectives;	
2. Receiving and processing the results of the questionnaire;	
3. Elaborating guidelines and a plan for further research.	

Source: Elaborated by the authors.

3.2. Formation of the sample

The sample was formed from students with 2-3 years of study in the bachelor program and consisted of 160 students. That said, 4 groups were included in the experimental group (EG)-76 students and the other students were included in the control group (CG). The average age of the students was 17.5 years. The selection criteria were as follows: 89% of attendance at lectures and the completed adaptation stage. Therefore, it was decided to select students from 2-3 years of study. Also, the sample included 8 teachers from the field of humanities, who at the time of the research, were teaching the said students. According to a preliminary survey, it was established which of the teachers supported the idea of introducing the project method into the curriculum. They were designated as the experimental group. The teachers who were doubtful about the experiment conducted classes in the control group.

While preparing for the experiment, two cohorts of students were randomly chosen through a selection process. During the selection process, factors such as the comparable level of students' knowledge and their

potential for future academic pursuits were carefully considered. In the control group (hereinafter referred to as CG), training took place using traditional educational methods, whereas another group (hereinafter EG) was engaged in using the project method. This enabled a comparative analysis of the efficacy of professional competence formation processes, utilizing pre-existing validated methodologies. The above number and composition of the sample made it possible to say that the research data are valid and reliable.

3.3. Data analysis

The study applied the practical methods outlined as:

- Methodology "Diagnosis of creativity" [25]. The test is a method of researching creative activity and realizing the individual's creative potential.
- The "Unfinished Thesis" method [26]. To determine the level of communication.
- Questionnaire for self-evaluation of students' knowledge and skills when transitioning to training using new technology [27].
- Methodology for assessing the basic competencies [28]. The respondents were asked to evaluate the level of knowledge, the ability to develop software and methodological support, and the ability to solve practical tasks in the framework of the project method.

3.4. Data collection

At the beginning of the experiment, two statistical hypotheses were formulated where:

H0 presumes that the difference between the $O_{exp\ i}$ and O_{contr} indicators is insignificant for all levels of position formation, i={1, 2, 3}.

H1 presumes that the values of O_{exp} and O_{contr} will be significantly different at the level of statistical significance.

The $\chi 2$ test was used to test H0. The value of the Kendall T statistical criterion was found using the (1):

$$T = \frac{1}{n_1 * n_2} \sum_{i=1}^{3} \frac{(n_1 * O_{exp_i} - n_2 * O_{contr_i})^2}{O_{exp_i} + O_{contr_i}} \quad (1)$$

where:

$n_1 * n_2$ – the number of CG and EG respondents;

O_{exp_i}, O_{contr_i} – the number of CG and EG respondents who were in one of the groups;

i=1 – corresponds to a high level of the aesthetic position formation,

i=2 – an average level,

i=3 – a low level.

The quantitative data obtained as the study findings are measured according to the rank scale.

4. RESULTS AND DISCUSSION

Implementation of the project method in EG was carried out in compliance with the following requirements:

- Availability of the necessary material in public access;
- A sufficient amount of time to complete the project, considering the individual features of the students;
- The possibility of using the recommendations elaborated by the teacher;
- The formulation of project topics ought to be designed in a manner that engenders interest and encourages students to acquire novel knowledge grounded on their own experiential background autonomously;
- Project work should take place in a friendly atmosphere, with cooperation and respect, without pressure on project participants and ensuring training flexibility;
- Students can solicit external resources from entities beyond their educational institution (e.g., museums, libraries, and publishing houses;
- The final presentation of the project was carried out in the form of a demonstration and commenting on a poster created by students or a demonstration of one's own model in accordance with the chosen topic of the project. It should be noted that any of ICT tools could also be used.

While diagnosing the creative component of educational activity, the evaluation encompassed all the knowledge acquired by students during their study of various academic disciplines. The Torrens test is aimed at identifying the level of development of the activity component of the students' aesthetic position. The obtained results are presented in Figure 1.

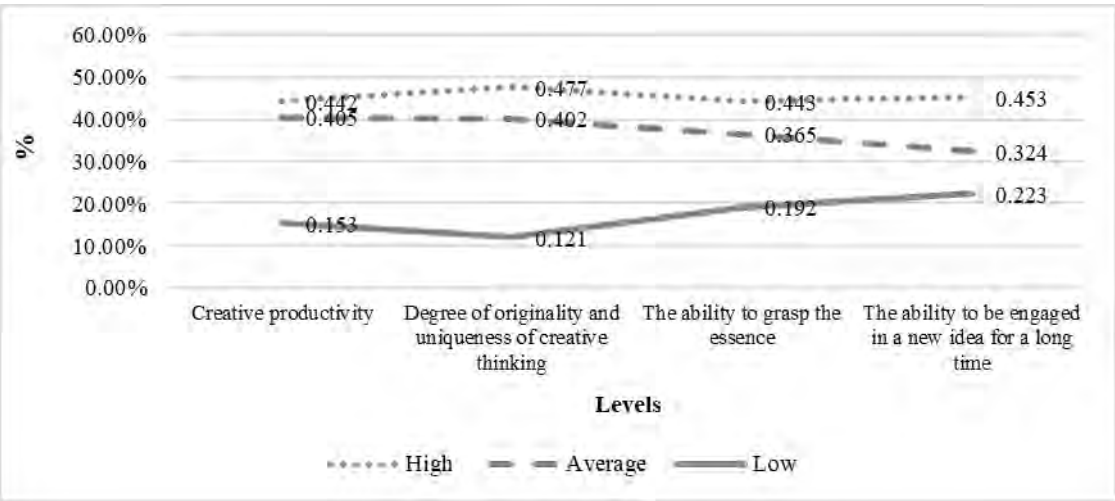

Figure 1. Distribution of students based on the development levels in their cognitive sphere while utilizing the project method

The obtained data indicate that by the end of the experiment, the majority of students EG had acquired creative productivity and also demonstrated a high degree of originality and uniqueness of creative thinking. Notably, 81% of respondents at medium and high levels have developed the ability to grasp the essence of the problem, and 78% of students can be engaged in a new idea for a long time. The results indicate that the majority of students are inclined to manifest a heightened level of creative activity when using the project method in education. The level of communication of students was determined using the observation method. It includes the ability to absorb and use the experience of others, as well as the ability to cooperate. Figure 2 was elaborated, drawing on the obtained results of the observations method and students' answers.

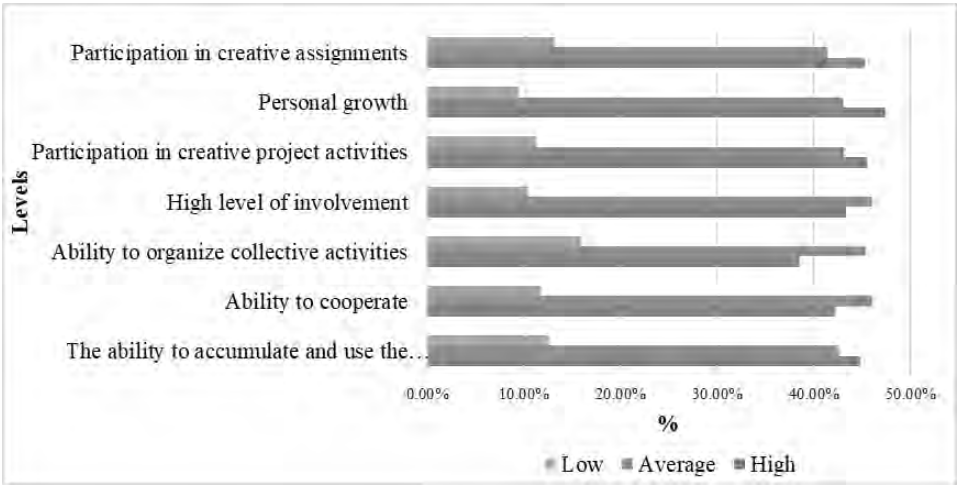

Figure 2. The EC distribution according to the formation level of students' cognitive activity communicative component while utilizing the project method

It was found that, on average, 90% of EG had exceptionally developed abilities to analyze and use the experience of others, 88% of students showed the ability to cooperate and help each other. Summing up, it is possible to conclude the high formation level of the students' cognitive activity communicative component among the students of the experimental group. In the course of the project activity, it was decided to divide the students of the experimental group into 4-5 individuals in order to create comfortable conditions for the emergence of emotional contact between them. This was done to facilitate effective communication and reciprocal support while also fostering a dynamic competitive environment. During the individual form of work

with each student separately, there were also positive interaction results. Notably, this organization format proved effective only in setting the tasks for the project activity when compared to other formats. Students of the experimental group demonstrated a high level of cognitive competence during various activities (seminars, lectures, independent assignments). The study revealed significant dynamics in epistemological competence formation between its beginning and end (on a scale of 10 points). Additionally, positive development trends were observed in all components of cognitive competence among EG students throughout the experiment.

At the end of the experiment, the number of students with high and medium levels of development of all components of professional competence increased. It was determined that at the end of the experiment, there were three times more students with a high level of cognitive competence than before the experiment. The number of EG students with a low level of cognitive competence decreased by 4.1 times. Summarizing the obtained data, graphs were elaborated to visualize the results Figure 3.

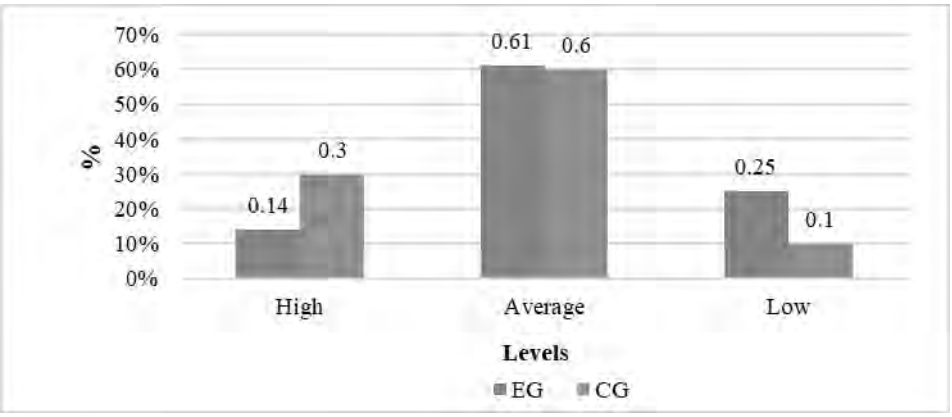

Figure 3. Results of EG and CG according to the levels of cognitive competence formation at the end of the experiment while utilizing the project method

To determine the effectiveness of pedagogical conditions in the formation of professional competence in project activities, there was a notable improvement in the progress of every student enrolled in the EG. The obtained results testify to the effective implementation of the conceptual model of the process of formation of professional competence among students during project activities. The distribution of $\chi 2$ and the reliability test of the H0 hypothesis are shown in Table 2.

Table 2. Distribution of χ^2

Value	CG before	CG after	EG before	EG after
1	13	12	14	5
2	16	16	20	23
3	4	5	4	10

The obtained values indicate that the selected scale and criterion ($\chi 2$) for testing the hypothesis and the method of data entry are aggregated data. In the formed table, you can trace a significant difference between the indicators of the experimental group and the control group. The obtained data statistically confirm the primary hypothesis H1 that the use of the project method has a significant impact on the effectiveness of the formation of professional competencies during the study of humanitarian disciplines.

The principal goal of the project method is to create pedagogical conditions under which the student's individual experience is formed in accordance with the chosen discipline. The main orientation of the project method is its focus on students' independent activity. While conducting the current study, the groups of students tackled specific problems that required the integration of acquired knowledge and skills. Having conducted the experiment and processed the obtained results, the formulated hypothesis H1 was confirmed, namely: "After implementing the project method, students' engagement in studying humanitarian disciplines will increase, and the level of motivation and understanding of the material will enhance".

We share the standpoint of Díaz-García *et al.* [8] that the use of the project method while teaching the humanities contributes to the formation of professional interests of students, as well as the opportunity to integrate a specific assignment into the framework of future professional activity [22]. According to Lim *et al.*

[29], a crucial step for the integration of the project method in elementary subjects is the main principle of education, namely "learning through action". In compliance with this principle, there is constant study and research of something new [15], [29]. Our study confirmed this conclusion, as the students noted that one of the exciting elements of the project-based learning method was their active involvement in the process of addressing professional problems. The research revealed that the main condition for implementing the project method in the educational process is the ability to organize a collective form of activity that requires the implementation of an educational influence that will be tailored to the individual characteristics of students and enhance the efficacy of joint activities. These findings confirm the results obtained by Fernandes *et al.* [6], where elucidated that collective activity improves the level of student success [30].

Moreover, one of the pivotal factors is the positive motivation of students for project activities. It is also important to form a permanent use of the system of project tasks, which will improve motivation to solve professional tasks independently. Rolinska [31] emphasizes the crucial role of the project method in the educational process. The use of this method enables enhancement of pedagogical instruction, encourages students to work actively, shows creativity and self-awareness, and also forms the skills of both independent and group work, short-term and long-term planning, and self-evaluation [16], [31], [32].

In the course of the conducted research, it was determined that the implementation of an innovative approach in project endeavors can be regarded as a successful development of expertise in the field. The qualitative advancement observed during project-based learning among intellectually curious students was essential. The implementation of project technology in educational settings has played a significant role in fostering students' professional self-determination. By providing a hands-on learning experience, this approach has enabled trainees to develop the skills and knowledge necessary for success in their chosen careers. Through projects, students have been able to explore their interests and gain a sense of direction regarding their future career paths. Obviously, project technology has had a positive impact on students' professional development and is an effective tool for promoting self-determination among learners. As part of the curriculum, students were encouraged to solve real professional problems in which they developed professional skills [33], [34].

5. CONCLUSION

Participation in project activities during training sessions enhances students' proficiency in identifying and organizing the key phases of a professional task, fosters better planning skills for individual assignments, facilitates accurate estimation of personal time and resources, promotes prioritization of critical tasks, and enables effective evaluation of work quality and efficiency. The conducted research confirmed the hypothesis that implementing the project method is a productive approach for comprehending and utilizing material from humanitarian disciplines in professional settings. The study has additionally given valuable insight into how adopting the project method can positively impact various personal factors among students, including motivation to master new material, raise their self-esteem, and enhance flexibility and social aptitude. The practical significance of the findings lies in their potential application within higher education institutions as educators endeavor to modernize practical classes by incorporating project-oriented techniques into the learning process. Subsequent investigations could be directed towards evaluating the efficacy of gamified approaches when teaching humanitarian subjects.

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