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ABSTRACT

The article contains the results of a study aimed at experimental testing of the effectiveness of the STEAM approach in the development of English language skills in future teachers. Random selection was used for sampling, the sample was subsequently divided into the experimental group (EG – 49 students) and the control group (CG – 54 students). The groups were aligned by randomization. An experimental methodology consisted in the creation of teams in EG, which worked on the development of socially significant projects, communicating in English and developing English language skills during the semester. Classes were held online in ZOOM and BigBlueButton with video recording, which allowed analysing the achievements and pay attention to mistakes for further correction. The obtained results were confirmed by statistical calculations of Pearson's chi-squared test. The study recorded the problems related to the need to explain students the nature, content and process of this approach, planning and coordination of the timetable and curricula related to the integration of academic subject in more detail. The conditions and opportunities for developing English language skills combined with soft skills (communication, critical thinking, creativity and collaboration) require further research.

Keywords: STEAM approach, English language skills, students, design method, teamwork method.

INTRODUCTION

A characteristic trend of the modern world is the complication of problems, which require the use of comprehensive analysis and creative approach. As a result, there is a growing need for professionals who are able to make decisions and solve problems with many unknowns in a changing, unstable and ambiguous environment. One of the promising ways to train such specialists is STEAM education, which combines science, technology, engineering, arts and mathematics (ScholarNet, 2019).

STEAM is an educational approach to learning that uses Science, Technology, Engineering, the Arts and Mathematics as access points for guiding student inquiry, dialogue, and critical thinking. STEAM integrates technical, natural and mathematical sciences through art, creates new opportunities for creativity and heuristic activities, thus increasing students' motivation for learning and professional development (Madden et al., 2013; Perignat & Katz-Buonincontro, 2019). However, the problem is that the application of the STEAM approach to the development of English language skills remains understudied and needs to be experimentally tested. Thus, the aim of our research is an experimental study of the application of STEAM-approach to the development of English language skills in future teachers of comprehensive educational institutions. The objectives of our study involved experimental testing of the impact of STEM on the development of students' English language skills, such as listening, reading, speaking, writing; proving the effectiveness of the STEM approach in the course of teamwork of students to develop English-language projects aimed at solving complex socially significant problems.

LITERATURE REVIEW

Recent research has convincingly shown that art classes promote civic engagement, social tolerance, and interpersonal relationships: "Multivariate analysis is used to estimate the effects of audience-based arts participation as well as personal participation in the arts (creating art) on three dimensions of civil society: civic engagement, social tolerance, and other-regarding behavior" (Leroux & Bernadska, 2014, p. 146). Recent surveys conducted by Ipsos indicate that "84% of Americans believe Arts and STEM subjects complement each other well" (Francis & Stephens, 2018, p. 113).

The interaction of STEM subjects and performing arts has a significant impact on increasing creativity in science, technology, engineering and mathematics. Experimental study by Rowe, Martin and Giacaman (2020) proves the positive interaction when teaching mixed groups in software design and choreography. Despite some limitations, the authors argue that "the data reveals that students who experience a more deliberate teaching of collaboration, experience a greater sense of learning about group work, and subsequently value an ability to work well in groups as a relevant professional skill" (Rowe et al., 2020, p. 229).

The problems of STEM education are in the focus of nationwide research in the United States. In particular, the findings of a study by the National Academies of Sciences, Engineering and Medicine, in particular, emphasize the importance of learning English for students of different ethnic groups to better engage them in the content of STEM education. For STEM English teachers, it is proposed to transform the curriculum to take into account the diversity of the population and to integrate English as a second language with the main curricula in STEM: "The imperative that all students, including English learners (ELs), achieve high academic standards and have opportunities to participate in science, technology, engineering, and mathematics (STEM) learning has become even more urgent and complex given shifts in science and mathematics standards" (Francis & Stephens, 2018).

The benefits of the STEAM approach in higher education are explored in a current large-scale Erasmus + project involving seven Europe's most renowned universities, such as Birmingham City University, UK, Central Saint Martins, University of the Arts London, UK; Trinity College, Science Gallery, Dublin, Ireland; Aalto University, Finland; Amsterdam University, The Netherlands; Dresden Technical University, Germany; Ars Electronica, Austria. The project aims to comprehensively study the effectiveness of STEAM approaches in higher education (STEAM INC, 2020). The authors of the project believe that STEAM thinking provides additional benefits to the traditional STEM scheme, since "Approaches that favour clear application of creativity and imagination, in combination with more typically understood STEM skills such as numeracy and analysis, are considered to be routes to deeper insight and more transformative innovation" (Cooper, 2020).

The international study, which included high schools in Australia, the United States, Canada and Singapore, focused on the benefits and barriers to developing creative and critical thinking through STEAM education. The authors note that "…inter-, trans- and cross-disciplinary learning shaped by teacher collaboration, dialogue and classroom organization that fosters critical and creative thinking. Implications are made for the ways practicing teachers develop and foster creativity via pedagogical approaches that enhance connectivity and interdisciplinarity of teaching practices between domains of learning" (Harris & de Bruin, 2018, p. 165). The educational creativity index developed by the authors is worth noting: "An education-based Creativity Index through which administrators and teachers can gauge, assess and implement creative skills, capacities, pedagogic practices and assessment of creativity within secondary schools is posited" (Harris & de Bruin, 2018, p. 172).

The study of Shatunova, Anisimova, Sabirova and Kalimullina (2019) is worth attention, where the authors attempted to develop a model of STEAM education, which relies on a project-based learning in the "creative spaces" of schoolchildren, students and graduate students who work jointly on projects initiated by society and business. According to the authors, "…the use of 'creative spaces' for the implementation of project activities of schoolchildren and students, the inclusion of the category 'art' in its content allows students to form skills and competencies necessary for the Industry 4.0" (Shatunova et al., 2019, p. 138).

However, the introduction of English language teaching in STEAM education entails problems in the learning process related to the need for additional support for students to develop their English language skills: "English learners need additional support to develop academic language skills in English, and teachers need to support language acquisition and learning through a variety of instructional techniques, including increased scaffolding, academic discourse, support in utilizing sentence frames, and increasing both general academic and domain specific vocabulary" (Herrmann, 2019).

Despite the intensification of research on the use of STEAM in education and its significant didactic potential, this approach has not yet found active application in teaching English to students, as evidenced, for example, in the publication of Zeiger (2021), who, appealing to research The National Academies of Science, Technology and Medicine of the United States, draws attention to the lack of access to STEM instruction for those who need to develop English language skills. As the author rightly points out, "This defiicit oftem stems from underfunded schools and underprepared educators placed within those schools. For many English language learners, the skills they are missing out on are the key skills they will need when it comes to getting a job in the future" (Zeiger, 2021).

METHODS

Participants

The general population in the experimental study consisted of fourth-year students of Kryvyi Rih State Pedagogical University, Ukraine (a total of 140 students) majoring in pedagogy-related specialities: Biology and Human Health, Geography, Mathematics, Computer Science and Information Technology, Psychology, English Language and Literature, Primary Education. The experimental and control groups were formed in two stages. A random population of 103 people was formed at the first stage by random selection, which corresponds to 95% confidence probability with a confidence interval of ± 5%. At the second stage, the sample was divided into two groups: experimental (EG — 49 students) and control (CG – 54 students). The groups were aligned by gender, age and levels of English language skills by randomization.

The English language skills were diagnosed through expert assessment of four indicators: "Listening" (understanding long speech and the main content of messages, aural perception of the information in the message), "Reading" (ability to read texts, analyse them and draw conclusions, compare received information with personal experience), "Speaking" (ability to express and conduct conversation on certain topics without preparation, to use grammatical structures and lexical units in accordance with the communicative assignment), "Writing" (ability to present information in a written form in accordance with the communicative assignment expressing one's own attitude to the problem, while correctly using lexical units and grammatical structures). The data obtained during the diagnostics were expressed through the European Credit Transfer and Accumulation System (European Commission, 2020): Grade "A" (90-100 points) corresponded to a high level, grades "B" and "C" (75-89 points) — to an average level, grades "D" and "E" (60-74 points) — to a sufficient level, grades "FX" (36-59) and "F" (1-35 points) — to low and very low levels.

EG was divided into seven teams of seven students from each of the above majors. The experiment lasted one semester of the 2019-2020 academic year and provided that the teams developed projects to solve complex socially significant problems during the first half of the semester, and defended their projects during the second half of the semester. An important condition of the experiment was that communication during classes was in English. Classes were held online in ZOOM and BigBlueButton with video recording, which allowed analysing achievements and drawing attention to mistakes for further development of communication skills. The teams received guidance materials and recommendations for preparing their projects, development of English language skills and organization of team activities.

Each team involved students majoring in English Language and Literature. Their objective was to organize communications and provide English-language support to team members. The educational activity of students in the process of preparation and defence of projects was evaluated by the criteria of activity and initiative (initiative, high activity; lack of initiative, low activity; absence or passive presence in class). In CG, classes were conducted according to traditional methods during this period.

Upon the completion of the experimental work in EG and CG, the second (final) measurement of the level of English language skills was carried out through the above method.

Procedures

The study used a model of Before-After Experiment with experimental and control groups. This model involves procedures related to sampling, the creation of experimental and control groups, the introduction of the experimental factor in the experimental group (experiment), comparison of experimental and control groups according to certain criteria before and after the experiment, presentation of experimental data and establishment their statistical significance.

The first procedure involved the selection and formation of experimental and control groups. The task was to form a sample from the general population of 140 students from seven academic groups, which would meet the statistical criteria of confidence probability and the calculation of the confidence probability of statistical error. An online calculator posted on the Onix Research (2021) website was used to calculate these criteria. The procedure for forming experimental and control groups was to divide the sample (103 students) into groups according to the levels of English language skills based on the results of expert evaluation. The method of random selection was used for that purpose.

The second procedure involved the diagnostics of students' level of English language skills before and after the experiment. The diagnostics was carried out by a group of expert teachers. Indicators and diagnostic criteria are described in detail in the Methods section.

The third procedure was to organise an experimental learning process using the STEAM approach. It is worth noting that the teams in the experimental group were formed by majors, which determined the themes of the projects. A detailed description of the organisation of training, development, presentation of projects and results of assessing changes in the development of English language skills of students of the experimental group is given in the Results section.

The fourth procedure was aimed at presenting the obtained experimental data and establishing their statistical significance. To do this, the obtained experimental data were presented in tabular form and using diagrams. The

difference or similarity of the evaluation indicators of the experimental results in comparison with the situation before the experiment and with the control group was established using Pearson's chi-squared test.

RESULTS

The results of the first stage of the experimental study were related to the comparison of groups by socio-demographic indicators (Table 1) and the levels of English language skills (Table 2) in the experimental group (EG) and control group (CG).

Table 1: Comparison of EG and CG by socio-demographic indicator

Groups	Number of students	%	Age (years)				Gender			
			22-25		26-29		female		male	
			Number of students	%	Number of students	%	Number of students	%	Number of students	%
EG	49	100	36	73.0	13	27.0	27	55.0	22	45.0
CG	54	100	37	69.0	17	31.0	30	56.0	24	44.0

Table 2: Comparison of EG and CG by levels of English language skills

Groups	Total		Levels of English language skills							
	Number of students	%	high		medium		sufficient		low	
			Number of students	%	Number of students	%	Number of students	%	Number of students	%
EG	49	100	7	14.0	22	45.0	15	31.0	5	10.0
CG	54	100	9	17.0	25	46.0	14	26.0	6	11.0

The analysis of Table 1 shows that the age and gender composition of the experimental and control groups have differences within the statistical error, which is confirmed by statistical calculations. By age: $\chi 2emp = 0.305 < \chi 2cr. = 3{,}841$ at a significance level of $p<0.05$. By gender: $\chi 2emp = 0.002 < \chi 2cr. = 3.841$, $p <0.05$.

Comparison of indicators of English language skills in the experimental and control groups given in Table 2, also indicates the absence of statistically significant differences: $\chi 2emp = 0.325 < \chi 2cr. = 7.815$, $p <0.05$.

Thus, it can be argued that EG and CG are homogeneous in terms of socio-demographic indicators and the level of English language skills.

As a result of the experiment, the teams created in EG developed and defended projects on complex topics that required consideration of selected issues from different angles. The work on the projects involved several stages. At the first stage, an intro class was held to provide instructions on choosing the topic, content, structure and scope of the project, distribution of tasks among team members, schedule and rules of joint work, as well as criteria for project evaluation and assessment of the level of English language skills. An important condition was that communication during the joint work of the team should be in English only.

In the second stage, the teams worked on the preparation of various parts of the project: introduction, literature review on the subject, the main part and conclusions, selection of photo illustrations, graphs, diagrams, figures, text and slides for presentation. When developing projects, students had to find, process and use at least twenty English-language publications with reference related to various aspects of the selected subjects. For example, in the project "People and Animals in the Urban Ecosystem" students provided ecological, biological, psychological, pedagogical and economic justification, developed models for forecasting trends and various options for solving the problem, including generalised financial and economic calculations.

The third stage involved defence of the developed projects, where each team presented an abstract of 2 printed sheets, an electronic presentation, as well as a report on a given topic lasting 30-40 minutes. All members of the team took part in the report, presenting the sections that they developed. The presentation of the project was followed by the discussions (lasting 30-40 minutes), which involved students from other teams to ask questions to the authors of the project and expressing their own opinion about the presented project. At the end of the project defence, the floor was given to experts (teachers of the Department of Foreign Languages), who assessed the quality of the presented materials, reports and answers to questions in terms of the level of English language skills.

In addition to the above project, the projects of other teams were presented for defence: "Aesthetics and Ecology of the Urban Environment", "Promoting a Healthy Lifestyle of Young People", "Smart City — a City for People", "Urban Transport: Problems and Prospects", "Advanced Technologies Saving Energy and Bioresources: Environmental, Technical and Humanitarian Aspects", "Transformation of Leisure Culture in the Context of Virtual Reality Development", "Development of Local Tourism: Problems and Ways to Solve Them".

According to the aim of the experiment, we present the results of assessing the development of English language skills in EG in comparison with CG (Table 3).

Table 3: Levels of development of English language skills in EG and CG (after the experiment)

Groups	Total		Levels of English language skills							
	Number of students	%	high		medium		sufficient		low	
			Number of students	%	Number of students	%	Number of students	%	Number of students	%
EG	49	100	12	25.0	27	55.0	10	20.0	0	0
CG	54	100	9	17.0	26	48.0	15	28.0	4	7.0

Analysis of the data in Table 3 shows that the share of students with a high level of English language skills in EG is by 8% (almost one and a half times) higher than the same indicator in CG; and, accordingly, with an average level of English language skills in EG — by 7%. In contrast, the share of EG students with a sufficient level is 8% less than in CG. It is important to pay attention to the absence of students with a low level in EG provided 7% of students of the same level in CG. These changes are clearly illustrated in Figure 1.

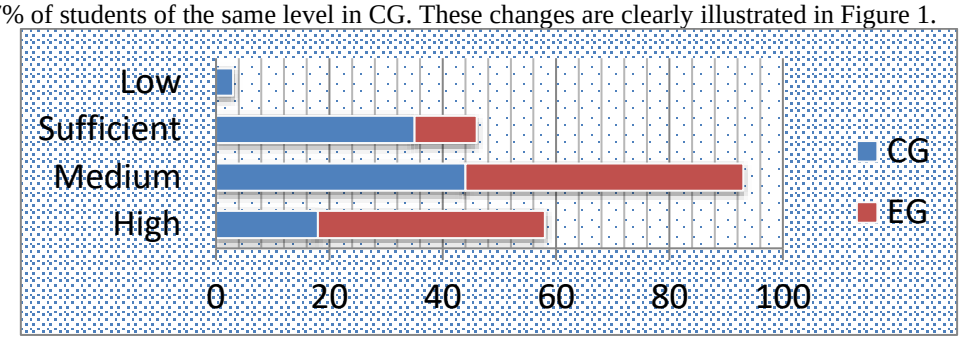

Fig.1: Comparison of levels of English language skills in EG and CG (after the experiment)

The recorded discrepancies are confirmed by statistical calculations: the empirical value of the criterion $\chi 2$ is 7.892, which exceeds the critical value of this criterion ($\chi 2emp = 7.815$) at a significance level of $p = 0.05$. Therefore, we can assume that the correlation between factorial and resulting attributes is statistically significant at a significance level of $p = 0.049$. In other words, this confirms the effectiveness of the experimental factor, which is the STEAM approach to the development of English language skills in our case.

It is also important to analyse the changes in the development of English language skills in the experimental group as a result of learning with the use of the STEAM method. Table 4 provides the relevant data.

Table 4: Changes in the development of English language skills in EG as a result of the experiment

	Total		Levels of English language skills							
	Number of students	%	high		medium		sufficient		low	
			Number of students	%	Number of students	%	Number of students	%	Number of students	%
After the experiment	49	100	12	25.0	27	55.0	10	20.0	0	0
Before the experiment	49	100	7	14.0	22	45.0	15	31.0	5	10.0

Comparing the results of the experiment with the diagnosis of levels of English language skills in the experimental group, we can state a significant increase in the number of students with high (11%) and medium (10%) levels due to reducing of subgroups with sufficient and low levels in similar proportions (11% and 10%), respectively. Figure 2 illustrates the comparison.

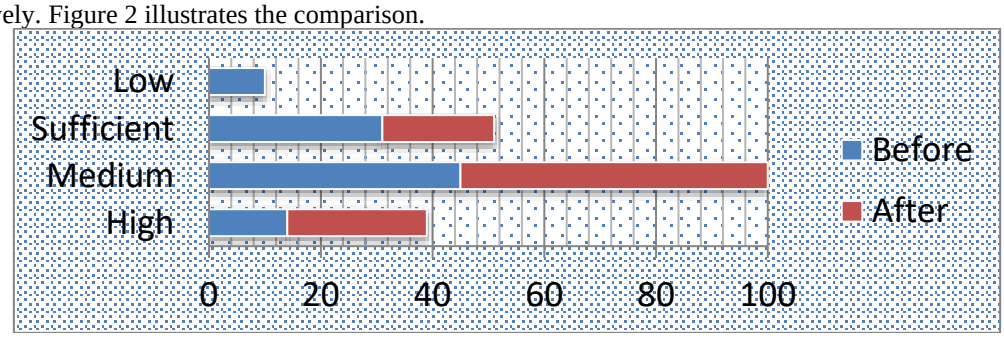

Fig.2: Changes in the level of English language skills in EG as a result of the experiment

Changes in the EG shown in Table 4 and in Figure 2 are due to the fact that 5 students, who had a medium level of English skills, raised it to a high; 10 students developed their skills from sufficient to medium, and 5 students with a low level showed a sufficient level of English language skills.

Since the main task of the experiment was to develop English language skills, we will consider the results of the evaluation of these skills in EG after the experiment. There were 12 (25%) students with a high level of listening skills. They understood long speech and the main content of messages of different levels of complexity, aurally perceived the presented factual information. They were able to find the necessary information presented in the form of evaluative judgments, descriptions, arguments in information texts with unfamiliar material. They had a high level of reading skills, that is they were able to read texts of different levels of complexity understanding their content in full; they were able to analyse the texts, understand their meaning, establishing logical connections between individual parts, within the sentence and between sentences; they could compare the information obtained with their own experience and draw their own conclusions. Such students also had a high level of speaking skills. They were able to express themselves freely and have a conversation without preparation on the studied topics, flexibly and effectively using linguistic means; they were able to logically build a monologue and dialogic interaction using grammatical structures and lexical units in accordance with the communicative task, without phonemic errors. In addition, students had developed writing skills: they were able to write messages, information in accordance with the communicative task with the expression of their own attitude to the problem, correctly using lexical units and grammatical structures.

According to the results of assessment, 27 (55%) students had a medium level of skills. In particular, regarding listening, they understood the main content of standard speech at a normal pace within the subject of situational speech, perceived the main content of messages and factual information presented in the form of evaluative judgments, descriptions, arguments. The development of reading skills was demonstrated by students' ability to read texts with full understanding that contained a number of unfamiliar words, the meaning of which they could guess; were able to find the necessary information in informative texts using a dictionary, could analyse it and draw appropriate conclusions. Students of this level had speaking skills that allowed them to express themselves coherently within the studied topics in accordance with the learning situation, to express their own attitude to the subject of speech; maintain a conversation, ask questions and answer them; were able to maintain a conversation using detailed replies; they were mainly able to use lexical units and grammatical structures in accordance with the communicative task, without phonemic errors.

Diagnosis of writing skills showed that students were able to write a message, expressing their attitude to the problem, write a personal letter, while correctly applying the learned grammatical structures in accordance with the communicative task, using a sufficient number of idiomatic expressions, connecting clichés, models, etc. A sufficient level of English language skills after the experiment was diagnosed in 10 (20%) students. In listening, they understood the main content of small texts read at a normal pace, which were based on the studied language material and contained a certain number of unfamiliar words, when they could guess their meaning; aurally recognized simple sentences, phrases and speech patterns read at a normal pace. They were able to read texts with full understanding that could contain a certain number of unfamiliar words, where they could guess their meaning. They were able to find the necessary information in the form of evaluative judgments, descriptions, arguments, provided that the texts contained familiar linguistic material.

The level of development of speaking skills allowed them to start and maintain a conversation logically, using a limited vocabulary and basic grammatical structures. At the interlocutor's request they could give basic evaluative information that reflects their own point of view. Writing skills at this level showed that students were able to write a short message or letter using a sample in accordance with the communicative task, while using insufficient number of connecting clichés and showed a mediocre variety of structures, models, etc. used.

It should be noted that no students with a low level of English language skills were recorded after the experiment, although this level was diagnosed in 5 (10%) students before the experiment in EG. In listening, they could barely aurally recognize simple sentences, phrases, and speech patterns read at a slow pace. They made significant mistakes in understanding the content of the listened text, which contained familiar linguistic material. They made significant mistakes when reading the text aloud and only partially understood the content of what they read. There were difficulties in speaking at the beginning and during the conversation due to limited vocabulary and basic grammatical structures. When asked by the interlocutor, they could not always give basic evaluative information and explain their own point of view. As regards writing skills, they had significant problems with spelling words, as well as a limited vocabulary and grammatical structures; made mistakes that complicated their understanding of the text.

DISCUSSIONS

Analysis of the results of our study suggests that the STEAM approach has a positive impact on the professional development of future English teachers, as evidenced by other researchers who used the integration of scientific, technological, technical, artistic and mathematical aspects in the educational process as an experimental factor. This thesis is confirmed by the study of Herro and Quigley (2017), in which the integration of STEAM was

investigated on the basis of project training, which included the political, social, economic, environmental and historical context. In contrast to our study, this project involved secondary school math and science teachers. The task of the study was also to understand the perception and practice of teachers, while in our study the experiment was aimed at developing students' English language skills.

The National Academies of Sciences, Engineering and Medicine studied the problem of teacher training in higher educational institutions using STEM and STEAM, in particular regarding the improvement of the educational system of English language teaching for students in the fields of STEM in colleges. This project covers a wide range of issues related to the involvement of students studying English in the STEM system (Dolgova Jacobsen, 2018; Zharylgassova et al., 2021). At the same time, our research focused on the use of STEAM as a means of improving students' English.

The work of Lee and Stephens (2020) had a significant scientific interest for our study, which outlines the conceptual justification of the system of using STEM in English-language education. Instead, an important aspect of our study was the complementarity of STEM subjects and English language, taking into account the interests and opinions of learners. This was achieved through the selection of topics for projects that provided environmental, biological, psychological, pedagogical and economic justification in accordance with the students' majors. This approach is critical because it increases their motivation and provides a conceptual framework for designing the education system. This is also confirmed by the study of Shernoff, Sinha, Bressler and Ginsburg (2017) which presents the identification of problems and the need to promote integrated approaches in STEM education.

The application of the STEAM approach to the development of students' English language skills, in particular, listening and speaking skills, showed positive results, as the training took into account the audio-language principles of joint activities of teams in project development and presentation (Malelea & Ramaboka, 2020). This required each student to immerse themselves in the topic, search for appropriate language tools, encouraged them to work hard to improve listening and speaking. The effectiveness of this approach is confirmed by a study of Likitrattanaporn (2017), who proposes to apply the principles of cognitive code and communication. In contrast to our study, the author believes that an effective training format for future teachers should include group brainstorming during the adaptation of learning materials, hands-on teaching, self-reflection, and reflection.

In addition to listening and speaking skills, our study found positive results in developing students' reading skills in English. These results correlate with the discussion in the educational field that the abbreviation STEAM should be further converted to STREAM through the integration of Reading (Jackson, 2019; Maarouf, 2019). In this regard, it is worth paying attention to the possibility of combining STEAM with other methods and techniques of developing students' English language skills. In particular, more and more teachers and researchers confirm the positive results of the application of cognitive linguistic approach in the study of a foreign language (Dolgova Jacobsen, 2018; Kaleta, 2020; Takimoto, 2020).

When analysing the results of our study, the question arose as to what other skills (besides English language skills) can be developed in the learning process involving STEAM approach. Practice shows that students of different fields and majors can not only develop their professional skills, but also gain a number of soft skills, such as communication skills, critical thinking, creativity and cooperation (Khamhaengpol et al., 2021; Thuneberg et al., 2018). These skills are identified as a priority in achieving success in 21st-century professions (Burkhard, 2020; Maarouf, 2019; Stauffer, 2020).

There are also problems related to the implementation of STEAM in the educational process, in particular, such as students' understanding of the content and process of this methodology, planning the educational process, as well as those related to the integration of subjects, assessment methodology, etc. (Herro & Quigley, 2019; Takimoto, 2020).

CONCLUSION

The research proved the effectiveness of the STEAM approach in the development of English language skills in students - future teachers. The experiment was conducted during one semester of the 2019-2020 academic year and involved 49 fourth-year students who studied for teaching-related majors. The STEAM approach was used as an experimental factor, which provided that students, working in teams, developed and defended social, environmental and cultural projects. In the control group (54 students) classes were conducted according to traditional methods during this period.

A comparison of the experimental and control groups showed that the share of students with a high level of English language skills in the experimental group is by 8% (almost one and a half times) and, accordingly, with a medium level — by 7%, higher than in the control group. In addition, an increase in the number of students with high and medium levels of English language skills in the experimental group by 11% and 10%, respectively, was diagnosed after the experiment. At the same time, the number of students with sufficient and low levels decreased in similar proportions: by 11% and 10%. It is significant that all 10% of students who had a low level of these skills increased it during the experiment to a sufficient level. The obtained results were

confirmed by statistical calculations of Pearson's chi-squared test. This gives reason to believe that the application of the STEAM approach has had a positive impact on the development of English language skills in students - future teachers. Communication during the work on the projects and their defence in English underlaid such positive changes in the experimental group. This greatly encouraged teams to expand their professional vocabulary, grammar, and improve their listening, speaking, reading, and writing skills.

The study identified issues related to the implementation of STEAM in the educational process of higher educational institution, such as the need to explain the nature, content and process of this approach to students, planning and coordination of schedule and curricula related to the integration of academic subjects, etc. Further research is needed on the conditions and opportunities for the development of English language skills combined with soft skills such as communication, critical thinking, creativity and collaboration.

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