The Specifics of Creating Student Multimedia Projects in University Humanitarian Education under the Conditions of the Pandemic

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Abstract—The creation of student multimedia projects in university humanitarian education is especially relevant under the conditions of the pandemic and in the context of the necessity to interact, motivate and involve students in cooperation. The purpose of the academic paper lies in developing a methodology for creating student multimedia projects in university humanitarian education under the conditions of the pandemic. The research methodology is based on the requirements, criteria, methods, tools for creating multimedia projects, qualitative analysis of multimedia works on the basis of criteria for work assessment defined by teachers. The academic paper contains content analysis, visual analysis of 3 multimedia projects of students created as part of teamwork during the pandemic (2020–2021). The results testify to the effectiveness of the proposed flexible methodology for creating student multimedia projects, which has provided the following basic requirements, namely: sufficient quality for public announcement; compliance of audio and video with the requirements of broadcasting, clarity, intelligibility; author's musical accompaniment of the work; providing students with the opportunity to determine the idea and format of the project. The principal features of creating student multimedia projects are as follows: 1) active use of social networks and websites by students; 2) involvement of various interested parties in projects; 3) participation of teachers as mentors, active participants of projects; 4) flexibility in defining the idea, genre, format, tools for promoting projects, content. The practical significance of the research results lies in the possibility of using the developed methodology for creating multimedia projects. As part of the implementation of projects, students have developed their own technical, organizational, creative abilities, the ability to work in a team and manage resources and time.

Index Terms—Multimedia projects, humanitarian education, students' competencies, multimedia in education, multimedia technologies.

I. INTRODUCTION

The creation of multimedia projects is becoming an increasingly relevant practical task in the framework of students' graduation theses. In conditions of the pandemic and isolation, the relevance of projects increases, forasmuch as it provides the development of skills, competencies; it allows using the theoretical material in practice [1]. Projects provide motivation and interest, involving students in the learning process in conditions of limited direct communication with teachers [2].

The main tasks of creating multimedia projects include as follows: the development of teamwork skills, creativity through the formulation of the idea of the work, technical skills and work with documentation, time management skills, public speaking skills, organizational skills, etc. Communication and cooperation in the modern information environment are one of the most in-demand skills, and multimedia projects are an effective tool for developing such competencies. Quarantine restrictions caused the distance between the participants of the learning environment, which has negatively affected the motivation, interest, involvement in the educational activities of students [1]. The projects have to some extent helped to solve these problems.

The purpose of the academic paper lies in developing a methodology for creating student multimedia projects in university humanitarian education under the conditions of the pandemic.

In order to achieve the purpose outlined, the following objectives have been identified, namely:
1) Developing a methodology for creating projects, defining the criteria for assessing student projects, defining the main stages of creation, requirements, and principles of work (team or individual).
2) Introducing the methodology of multimedia project assessment to students.
3) Performing an assessment of the results of creating student multimedia projects.

II. LITERATURE REVIEW

Dynamic changes in the introduction of information technologies have contributed to spreading multimedia projects in education as a method of teaching, development of technical, digital and creative skills of student. Traditional forms of learning have changed in favour of the active use of digital tools, the development of online learning and e-learning or distance learning, blended learning based on collaboration, where an augmented reality-based multimedia environment created for experimental education [3]. Blended learning combines different methods of student work, including asynchronous or synchronous learning modes with application of multimedia projects [1]. Hybrid learning using multimedia technologies is synonymous with blended learning. Multimedia projects are used as a strategic tool for the development of various skills of students, in particular:

teamwork, cooperation, development of creative abilities, time management, organization of educational work, improving communication skills and planning [1]-[4].

Currently, multimedia projects are increasingly used for online and blended learning in universities and colleges. Many studies have revealed an improvement in the effectiveness and efficiency of student learning in the framework of the developed multimedia projects in accordance with the instructions of teachers [5]-[7], compared to training where only one media resource, such as text, is used [1], [8]-[10]. Other investigations have revealed no improvement in learning outcomes due to the inclusion of multimedia in the curriculum [9], [10]. Along with this, the efficiency of creating multimedia projects differs significantly depending on the proposed development methodology. For instance, in psychology classes, some scholars have found better learning outcomes using multimedia compared to traditional text-based learning [11].

According to the multimedia learning principle [12], [13], information is better absorbed by people if graphics, images, static illustrations such as pictures, graphics, maps, photographs and dynamic graphics, animation or video are used in addition to words. Based on the cognitive psychological literature, Mayer [12], [13] has theoretically come to conclusions about the basis of cognitive theory of multimedia learning – "dual-channel, limited capacity, and active processing". Multimedia is increasingly used in online and hybrid learning due to a number of benefits [14]. The assumption about the duality of such learning is that people process separate channels of information for visually presented materials, which are closely related to the theory of double coding [15]. The assumption about the limited potential of multimedia lies in the fact that people are limited in the amount of information that can be processed in each channel at the same time, which must be taken into account when designing multimedia learning. The supposal concerning active processing is that people are actively learning, absorbing the relevant input information, organizing the selected information into coherent mental representations and integrating mental representations with other knowledge. Based on three assumptions, Mayer [12] has proposed a cognitive theory of multimedia learning, which is characterized by limited ability; it defines the human mind as a two-channel, active system of information processing in learning. The theory of multimedia learning lies in the fact that the understanding and acquisition of educational materials occurs in the process of active learning, where students are actively involved in the educational process through technologies. Active learning promotes cognitive processing of materials, intelligent integration of information into existing knowledge systems. This is precisely why multimedia projects are increasingly used in educational activities.

The use of multimedia technologies for learning is an incentive; it develops interest, motivation and encourages students to be actively involved in the educational process, providing cognitive processing of information through words and graphics [15]. Involvement through active learning is a key advantage of multimedia projects in student learning. For instance, Shin [16], Biocca & Choo [17] have investigated the process of engaging students in the virtual learning environment, which is one of the innovative forms of multimedia learning by using virtual reality technology; the scholars have revealed a significant influence of this form on learning materials and student satisfaction [16], [17].

Thus, the following case studies of multimedia tools are studied in the scientific literature, namely: the level of their efficiency and success; technological components; restrictive factors in implementation, in particular, the perception of teachers and pupils, students; scope of application; implementation mechanisms; assessment methodology; age groups targeted by multimedia tools [18]. Previous investigations have been focused on the benefits or effectiveness of multimedia learning projects [19]-[24]. At the same time, there are few practical studies that offer methods of creating multimedia by students in a pandemic, and analyse cases of project creation according to the developed methodology. The scientific literature discusses methodologies for evaluating student multimedia projects. For instance, the multimedia model presented in the scientific work [19] covers the development of a project based on a 10-step multimedia development model, namely: Step 1: Defining learning goals, objectives and audience. Step 2: Exploring existing options. Step 3: Determining the format, budget and timeline. Step 4: Determining the content, activities and assessment strategies. Step 5: Development of a strategy, criteria and evaluation tools in order to determine the effectiveness of the project. Step 6: Development of a flowchart, map, or assessment instruction. Step 7: Development of a prototype project. Step 8: Conducting a project evaluation. Step 9: Finishing the design. Step 10: Conducting a final product and evaluation process. However, the authors did not find publications that analyze the experience and methodology of creating multimedia projects by students during the pandemic.

III. RESEARCH METHOD

The methodology of creating student multimedia projects in the framework of activities of the Journalism and New Media Department of the Institute of Journalism of Borys Grinchenko Kyiv University has been developed in the academic paper. The multimedia project was aimed at developing a video work – an audio-visual work (hereinafter referred to as the creative work) of an established or innovative format, intended for publication in traditional or new media (multimedia platforms on the Internet).

In the academic paper, based on the established criteria for assessing students' projects, a qualitative analysis of the created works has been carried out. The main criteria for assessment of creative works are represented in Table I. The assessment for each criterion has ranged from 1 to 10 points, where 1 – low grade, 10 – high grade.

The methodology of video work development provided as follows:
1) definition and substantiation of an important socially significant topic of the work by students;
2) formulation of ideas of the creative work and development of a step-by-step plan for its implementation from design to demonstration (technology of video

product production);

3) selection of the appropriate theme and idea of the genre / format of the work, strict compliance with the requirements for this genre / format or justified innovations;

4) independent or team fulfilment of a number of works on implementation of the work (script, shooting, editing, popularization).

TABLE I: The Main Criteria for Assessing Creative Works in the Framework of Multimedia Projects, Developed by Students

Criterion	Essence
Relevance	Relevance and depth, social significance of the chosen topic, its ideological embodiment.
Compliance	Compliance of the work with the chosen genre / format, degree of innovation.
Value	One's own substantiation of the value of the author's work, the role of the author / presenter.
Depth	Depth of research and development of the topic.
Clearness	Clear definition of objects, personalities and locations of shooting and their compliance with the stated idea and format of the creative work.
Quality of methodology	Mastering methods of collecting information, in particular, video and audio materials.
Quality of principles used	Implementation of the principles of drama and composition, the presence of a motivated connection between episodes.
Originality	The originality of the plot and the presence of the author's style, developed interactivity of the work.
Technical quality	Technical quality of the creative work, in accordance with the air parameters and requirements of the broadcast – television, Internet (images, sound).
Accuracy of information used	Accuracy of information used – verified sources, verified information; competent titration (names, surnames, titles), reliable citation (in particular, video citation).

Source: developed by the author.

The principal criteria and requirements for the creation of multimedia projects by students are defined as follows: sufficient quality for public announcement; compliance of audio and video with the requirements of broadcasting, clarity, intelligibility; author's musical accompaniment of the creative work; providing students with the opportunity to borrow music from open databases; the work must contain captions – input, synchronous, informational and final.

The methodology also included the technology of creating multimedia projects; in particular, the following stages of work development were proposed, namely:

1) search and substantiation of the topic, idea, genre / format, writing a script application;

2) elaboration of sources, formation of information case;

3) planning the production of the creative work from conception to presentation, writing a plan;

4) search for a script and the formation of the composition, in accordance with the requirements of drama, writing a script based on episodes;

5) choosing the visual style of the work, searching for images of heroes or phenomena-problems, writing a short directorial script (treatment);

6) shooting the creative work using the necessary technical tools and techniques, recording high-quality sound;

7) review of the filmed material and drawing up of the assembly plan, if necessary, attraction of compilation material;

8) editing of the full version of the creative work and, if necessary, editing of a demo graduation version of the work (teaser).

Three groups of 5 - 6 students were involved in the creation of projects; the participants of the projects obtained the tasks in accordance with the main stages of the project creation and their abilities. Five weeks were allocated for the creation of the project: from the beginning of October 2021 till the beginning of November 2022. Participants had the opportunity to hold personal meetings within the group or perform tasks according to a plan remotely and independently of each other. Thus, a form of collaborative learning was essential in the process of creating projects. Students could use both synchronous and asynchronous media creation formats [18].

The study included an analysis of the processes of creating projects and their implementation, project implementation tools (used multimedia), as well as goals. By the way, the criteria developed by the authors were also used in the academic paper for evaluating projects.

IV. RESULTS

Students had the opportunity to choose a genre, format of the creative work (traditional, hybrid), among the requirements for the creation of which is a high degree of innovation. The proposed formats of multimedia projects are reflected in Fig. 1. Project teams consisted of an average of 5 – 6 people who independently determined the tasks for each participant in accordance with the developed project plan and abilities.

The first team of students, using the social network Instagram, has implemented the Project – Competition of photo / video works about the library and the book for schoolchildren and students (hereinafter referred to as Project 1). Within the framework of Project 1, readers of books were involved in the social network; they were able to share information about their favourite works during the pandemic with the help of videos and photos (Fig. 2). The purpose of Project 1 lies in promoting literature and reading, uniting students and exchanging impressions from books read, sharing knowledge and understanding of literary works. The winners of Project 1 have received a number of prizes from the students – organizers.
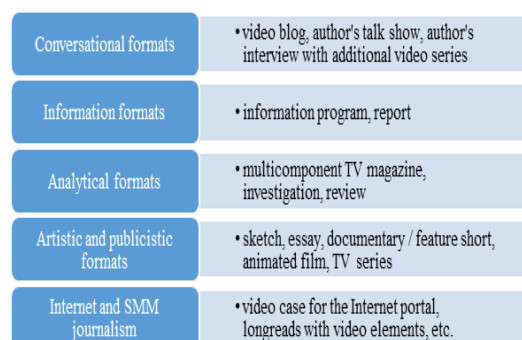

Fig. 1. Possible formats (genres) of the creative work within the framework of students' multimedia projects.
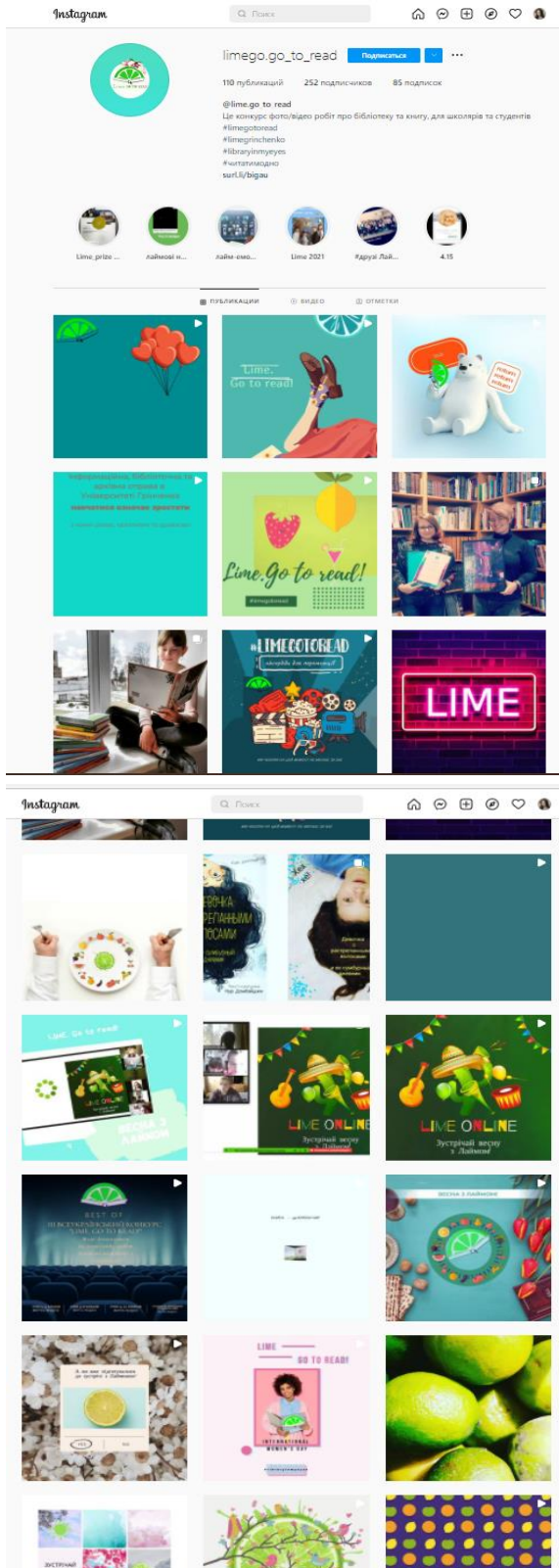Source: developed by the author.

Fig. 2. Social network page of the Project 1 – Photo / video competition about the library and the book for schoolchildren and students.
Source: created by students.

The final assessments of works within the framework of the multimedia projects developed by students are represented in Table II. In general, the projects were characterized by a high level of significance, value, depth of the selected issues. Students correctly identified methods for collecting information, creating content; they properly selected tools for popularizing projects, platforms for getting acquainted with the final product.

TABLE II: FINAL ASSESSMENTS OF WORKS WITHIN THE FRAMEWORK OF THE MULTIMEDIA PROJECTS DEVELOPED BY STUDENTS

Criterion	Project 1	Project 2	Project 3
Relevance	10, the unification and communication of students and students in a pandemic is especially needed	8, the relevance was the need for students to interact, but insignificant social issues were covered	10, it is especially relevant for the promotion of the Ukrainian language
Compliance	8, the project within the framework of the competition was organized through social networks; it corresponded to the idea and genre	8, the project corresponded to the format and showed the life of students during the pandemic in the video	9, the project corresponded to the format
Value	9, the value was to unite pupils and students through literary works, exchange of experience	8, the project was valuable in terms of student interaction and knowledge sharing	10, the value lies in the cultural enlightenment of language
Depth	10, under the conditions of the pandemic, reading books and involving students in libraries was of particular importance	7, the theme was not sufficiently developed; some videos deviated from the theme	10, the project covered different countries of the world due to the improvement of the Ukrainian language
Clearness	9, schools and faculties of the university were selected fully corresponding to the format	7, lack of clarity due to lack of clearly defined locations and participants of the video	10, clearly defined participants and stages of the project
Quality of methodology	8, more photos were used; video content was not of good quality	8, students showed a sufficient level of mastery of video creation techniques	10, participants developed a clear plan and stages of implementation; they identified collection methods and distributed them among participants
Quality of principles used	9, the posted photo and video content connected the episodes of the Project in general	8, the connection between episodes was traced	9, the website was fairly well designed and structured
Originality	10, interaction with participants took place on a regular basis	7, the author's style was traced	10, no one has implemented such a project yet
Technical quality	8, the overall image quality was high, but the overall picture of the project needed to be improved	8, high-quality video materials, but not sufficiently composed	7, the website needs refinement in terms of user interaction, colour
Accuracy of information used	10, the information used was fairly accurate	9, almost all the information used was specified	10, all information is up-to-date and accurate

Source: developed by the author.

Project 2, entitled "LIVE IS TRUE", is dedicated to the

real life of students – journalists under the conditions of the pandemic (Fig. 3). This is a modern project about real life and the world according to young journalists' viewpoint through the prism of facts, objectivity and professional ethics. Students suggested viewers to view the following sections, namely: 1) Human – about people and social author projects; 2) Review – about events: meetings, live broadcasts, interviews, etc.; 3) Inspire – about art, culture and inspiration. Project 2 lasted during 2020–2021, in which students used video to tell stories in the framework of certain categories.
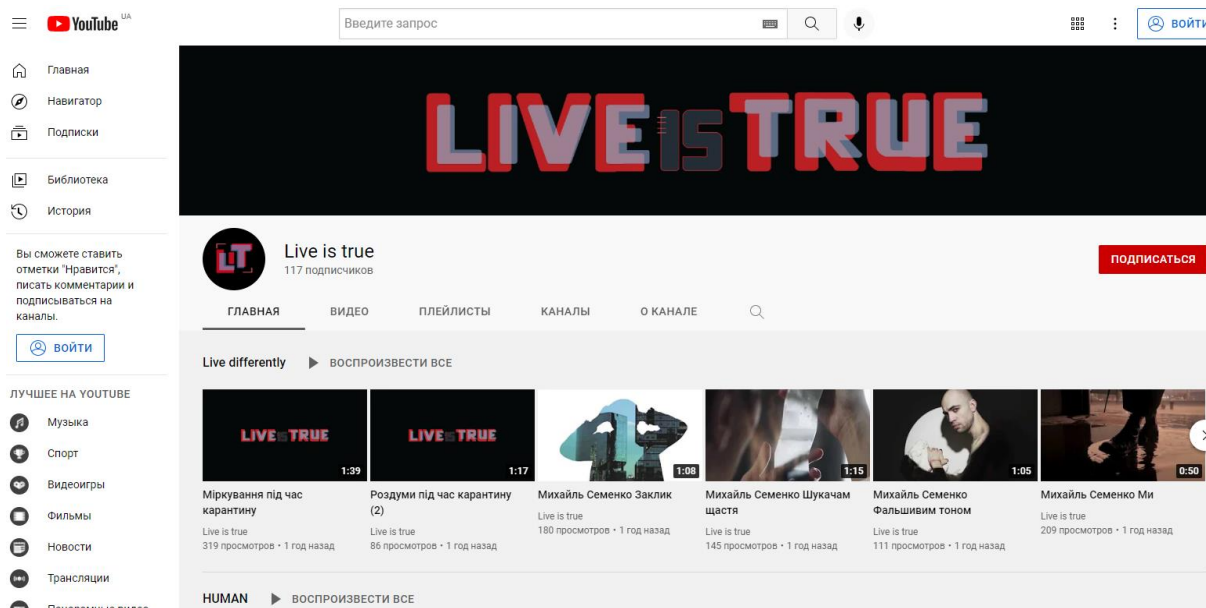

Fig. 3. Social network page of Project 2 about the lives of journalists.
Source: created by students.

Project 3 "Online project SlovOpys" is one of the most successful stories of mass media language and cultural education of Borys Grinchenko Kyiv University (Fig. 4). Project 3 is among the TOP-5 all-Ukrainian resources that help improve the Ukrainian language, according to a study by the popular all-Ukrainian publication Media Detector. As of 2020, SlovOpys has more than 50 000 subscribers on social networks: Facebook, Instagram, YouTube. Borys Grinchenko's Dictionary of the Ukrainian Language inspired the students and teachers of the University to create this multimedia project back in 2013.

The daily increase in the number of subscribers is a confirmation of the effectiveness and necessity of the project, as well as the fact that there is actually a huge demand in the society for such knowledge and the need to learn Ukrainian. The mission of the project is as follows: popularization of the Ukrainian language, lexical richness and culture of speech, development of national consciousness and culture, and the slogan: "Ukrainian is modern and timely!"

Fig. 4. Official site of Project 3 "Online project SlovOpys".
Source: created by students.

The geography of SlovOpys fans has gone beyond Ukraine, including the United States, European countries, Turkey, Israel, Belarus, Georgia, Mexico, and other countries. SlovOpys is constantly looking for new directions in information; it is implementing various cultural information campaigns. In particular, the basic areas include as follows: the study of the Ukrainian language in preparation for the EIT; video reviews of cultural projects and text and video blogs of rare Ukrainian words, and educational campaigns on the correct use of words and expressions. By the way, subscribers also have an opportunity to learn a lot about famous Ukrainians in the field of linguistics, ethnography, literature, history, culture, painting, art, folk customs and traditions, Ukrainian cuisine and folk art. Project 3 has been developed in the interaction of students and teachers – mentors who have significant practical experience. The combination of experience and fresh viewpoints make this project exciting, interesting and popular, as evidenced by the daily growth in the number of subscribers.
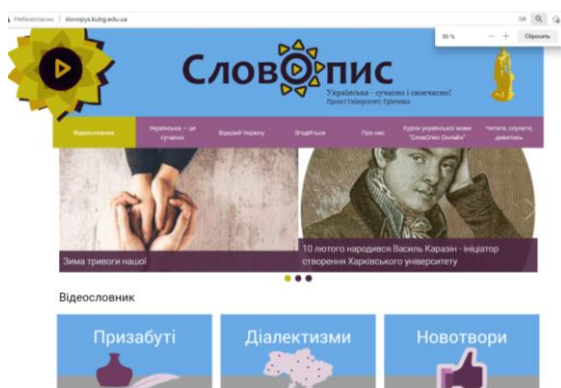
V. Discussion

The specifics of the creation of multimedia projects by students in university humanitarian education was characterized by the following features, namely: 1) active use of social networks and websites by students for promoting the Projects; 2) involvement of various interested parties in projects (for example, students in the competition within the Project 1), which contributed to a higher level of responsibility, interest in projects, accountability; 3) participation of teachers as mentors, active participants in projects, which provided greater popularity; 4) predetermined idea, according to which the genre, format,

tool for promoting projects, information, data, materials for content development have been selected; 5) socially significant idea of the project as a way to unite participants on common problems and tasks of the society; 6) students' understanding of their own abilities and strengths (for instance, in collecting information, organization, technical skills, etc.) contributed to a more effective creation process; 7) under the conditions of the pandemic, projects were aimed at promoting interaction, communication of students, exchange of skills, experience.

The project and its planning is an effective type of educational activity, forasmuch as it helps students understand their own skills, abilities, competencies, and their development in the process of creating a product. Communication and cooperation, as important ways of interaction within teams, have contributed to the development of skills for joint solution of tasks. The use of technology has contributed to the development of technical skills, and social media has allowed students to form basic knowledge about the algorithm of their work, the importance of planning media activities in the framework of projects.

The clarity of the methodology for creating projects is a considerable principle for students to understand the tasks, tools and methods of multimedia development. Cooperation of teachers and students within the Project has contributed to better organization, time management, and timely creation of video content. The use of social media and websites has provided high interest in the process of creating, involving, facilitating teamwork, effective organization of Project participants' activities.

VI. CONCLUSION

The conducted research proves the efficiency of the proposed flexible methodology for creating student multimedia projects. The basic requirements for the creation of works are as follows: sufficient quality for public announcement; compliance of audio and video with the requirements of broadcasting, clarity, intelligibility; author's musical accompaniment of the work; providing students with the opportunity to determine the idea and format of the project by themselves. The principal features of creating student multimedia projects are as follows: 1) active use of social networks and websites by students; 2) involvement of various interested parties in projects; 3) participation of teachers as mentors, active participants in projects; 4) flexibility in defining the idea, genre, format, tools for promoting projects, content. Joint solution of socially significant issues by students, which reflects the idea of the project, is a way to unite participants on common tasks of the society. In the process of planning the main stages and activities of the project, students have identified their own resources (abilities, skills, competencies), which has made it possible to use them in the most effective way, to realize their own strengths (for instance, in collecting information, in the organization, in technical skills, etc.). Collaborative work and communication have contributed to a more efficient process of creating works. In the context of the pandemic, the projects were aimed at promoting interaction, communication of students, exchange of skills and

experience.

The Internet and SMM journalism were the most common genres of works among students who actively used social media to implement projects. According to the viewpoint of Egyedi [18], social media provides an advantage in the form of attracting the target audience and promoting the chosen socially significant topic.

Multimedia projects of students based on the estimates of their effectiveness according to the developed methodology indicate the social significance. The association of project participants and the possibility of remote communication, exchange of experience and knowledge were qualitative effects of social integration of participants within groups. Similar conclusions are contained in the scientific work Komalasari [18], who noted the importance of establishing communication in a pandemic through remote forms of student work.

An important skill of the students, which was developed in the process of project implementation, was the ability to plan the stages of the project, especially within project participants, where students clearly defined the plan and stages of the project, identified methods of collecting information and distributed them among participants. As it has been noted in the study of Zhang et al. [18], the management of multimedia projects through the self-organization of students provided a decent result of the participants.

Subsequent investigations should be aimed at developing a methodology for quantifying the effectiveness of student multimedia projects in university humanitarian education under the conditions of the pandemic.

CONFLICT OF INTEREST

The authors declare that there is no conflict of interest.

AUTHOR CONTRIBUTIONS

Mariana Angelova and Olena Brovko conceived of the presented idea. Nina Zrazhevska and Alina Lisnevska verified the methods, performed the computations, and designed the figures. Tetiana Polishchuk and Yana Fruktova verified and supervised the results and discussion of this work. The findings were discussed among the authors, who all contributed to the final manuscript and approved the final version.

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