

# Effectiveness of Multimedia-Based Instruction in History Teaching: A Mixed-Methods Study of Undergraduate Students' Academic Performance in Bangladesh

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## Abstract

**Background:** This study explores the effectiveness of multimedia-based history teaching among undergraduate students in Bangladesh. The effectiveness of multimedia instruction is evaluated by measuring students' academic performance and learning outcomes compared to traditional lecture-based approaches.

**Methods:** A purposive sample of 59 second-year honours students was divided into an experimental group ( $n = 30$ ) receiving multimedia-based instruction and a control group ( $n = 29$ ) receiving traditional lecture-based classes. An academic test was administered to assess differences in student performance. Additionally, a survey using a semi-structured questionnaire was conducted to evaluate the perceived effectiveness of multimedia instruction in the history classroom.

**Results:** Students in the experimental group achieved evidently higher test scores than those in the control group. Furthermore, survey findings indicated that students who experienced multimedia instruction enjoyed the classes more and reported higher learning gains compared to those in traditional classes.

**Conclusion:** Multimedia-based teaching is more effective for undergraduate history education than traditional lecture-oriented methods. Overall, history students taught with multimedia engage more actively and demonstrate superior learning outcomes.

**Keywords:** multimedia instruction, history education, Pedagogy, academic performance, higher education

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## I. Introduction

### Background

In the modern world, the process of learning has been changing. Learning through the traditional method can be improved by incorporating multimedia-based classes, which can help both students and teachers understand content in a more flexible way (Ilhan & Oruç, 2016). Because information and communication technology brings a new dimension to the arena of education, especially in the instructional genre (Akinoso, 2018), multimedia-based teaching has become more relevant in contemporary classrooms. To understand what multimedia is, Mohd Elmagzoub (2015) describes it as the combination of two or more different media within a computerised system, which can include animation, text, audio, video, as well as image. As pedagogy contains a two-way interaction between student and teacher, multimedia can help implement the strategy in a more plausible way (Clarke, 2011). Thus, when it comes to history, multimedia can play a very important role as it provides visual scenes of the dead men's story. Recent studies also support the usefulness of digital and multimedia-based learning in history and related educational settings. For example, Malysheva et al. (2022) found that digital tools increased students' motivation and strengthened professional competencies in history learning, while Toktamysov et al. (2023) examined the use of digital technologies in history training and highlighted their contribution to students' academic performance. In addition, a recent systematic review by Staneviciene and Žekienė (2025) showed that multimedia tools can enhance student engagement, motivation, and learning outcomes in higher education. To attain the objective of the study, both the opinion of students and answer scripts on students' academic performance are evaluated so that a logical and evidence-based effectiveness can be assessed to understand the see engagement and learning outcomes.

Through scrutinizing the role of multimedia in the history class, it would be possible to improve students' learning outcomes in the subject. Besides, learning from multiple sources, one can teach better in history understanding. Recent studies such as Brush and Saye (2002) and Britt and Aglinskias (2002) show that effective computer programs facilitate students' understanding of history. Thus, multimedia provides a comparatively easy way of learning historical content, which provides a ground to work on the topic so that the effectiveness of

multimedia-based classroom can be analysed in a more critical way. Multimedia has become an easy instructional process compared to traditional teaching techniques. By this process, it can enable instructors to provide better learning outcomes within fewer hours while ensuring the quality of instruction (Li & Kang, 2014).

### **Rationale of the Study**

The study would aspire to make an attempt to analyse the effectiveness of multimedia-based history class in student's academic understanding and performance, if any. Multimedia application in education has been increasing day by day as the tool is getting popular at the classroom practice for its effectiveness to make understand contents of a particular discipline (Li & Kang, 2014). Many critics suggest to use technology-based class at classrooms though the effectiveness of data-driven subject-specific study of technological use in the classroom is meagre (Crosier, Cobb, & Wilson, 2002) which is also very true in the college-level educational institution in Bangladesh. Recent work on history education also shows that digital media has a crucial place in students' learning of history, while recent higher-education research endorses that multimedia is most useful when it is aligned with instructional practices (Staneviciene & Žekienė, 2025). The study tries to take an initiative to discuss about the importance and effectiveness of the use of multimedia in the classroom which can contribute to the existing literature related to multimedia-based classes in the tertiary education of Bangladesh.

### **Objectives of the Study**

The main objective of the study is to understand the effectiveness of multimedia in understanding. The study aspires to analyse the importance of multimedia in teaching history subject through examining the performance of students. Through the study readers will have got an insight about the necessity of using technological tool to comprehend tertiary level history contents.

### **Statement of the Problem**

The study intends to analyse the effectiveness of multimedia-oriented history class on the academic performance of students. Recently, we found the multimedia is efficient in increasing students' class participation, motivation and academic performance, (Staneviciene & Žekienė, 2025) however the study relevant to Bangladesh is still meagre. Therefore, it remains necessary to examine to what extent multimedia-based history class can enhance students' understanding and academic performance.

### **Research Questions**

The study intends to understand undergrad students' opinion regarding multimedia class of history contents which would help us to understand the impact of multimedia technology on their performance. Besides, through reviewing the answer script of the students of both who attended on the multimedia class and traditional class can help comprehend the effectiveness of multimedia class in teaching history. The research questions for the study are-

1. What are the students' views regarding the multimedia in history classes?
2. To what extent does the use of multimedia enhance academic performance?

### **Delimitation of the Study**

The study is based on purposive sampling which might have the main limitation due to the fact that the samples may not represent the population. Due to time and resource limitations, the study is conducted only one college i.e. Murarichand College, Sylhet. During multimedia class several incidents of power cut have been occurred. Multimedia class has been disturbed by load shedding. Time limitation for the study is a major drawback of the study. The dynamics between effect of multimedia and academic performance cannot be fully defined within the experiences of only five classes. Besides, within two months or so, it is difficult to reach a conclusion of the effectiveness of multimedia instruction on academic performance. The study is centred on the response of students who have very limited idea about multimedia-based class which may not provide accurate data for the study. To legitimize the limitation, a session has been taken to make the participants understand the statements (questions) of the questionnaire clearly.

## **II. Literature Review**

### **Teaching with Multimedia**

Multimedia is generally understood as the integration of text, graphics, audio, video, animation, and other digital resources for presenting information in a more effective way (Akinoso, 2018). In education, multimedia has become an important instructional tool because it supports explanation, interaction, and learner participation. It helps teachers present complex content more clearly and enables students to learn through more than one mode at the same time. Earlier studies also suggest that learning from multiple sources improves students' understanding and interpretation of subject matter (Barton, 1997; Ferretti et al., 2006; Gabella, 1994).

In classroom teaching, multimedia is valuable because it can make lessons more interactive and meaningful. Britt and Aglinskias (2002) and Saye and Brush (2002) found that computer-based technology can support students' understanding, judgement, and justification during classroom activities. Similarly, Li and Kang (2014) argued that multimedia helps integrate instructional skills and learning outcomes through images, videos,

and technological tools. In this aspect, multimedia helps make the classroom student-centered with actively engaging students which make multimedia classroom as an enabler for both teachers and students.

### **Multimedia-based History Teaching**

History often deals with the past which is difficult to visualize it listening and reading the facts. Multimedia, through images, videos, map, animations or documentaries, teachers can portray past events in more vivid and understandable manner (Sousa et al., 2017).

History is often regarded by students as difficult or boring because of its dependence on memorization of dates, events, and places (Stetson & Williams, 2005). For this reason, multimedia has been recommended as a way to make history instruction more lively, student-centred, and engaging (Molebash, 2002). More recent evidence supports this view. Malysheva et al. (2022) found that online and digital learning environments in history education improved motivation and supported the development of professional competencies among history learners. Toktamysov et al. (2023) demonstrate that digital technologies used as multimedia through Quizlet and virtual reality have positive effects on academic performance in history.

### **Effectiveness of Multimedia-based Class**

The effectiveness of multimedia should not be seen as automatic. Technology becomes effective only when it is connected with sound pedagogy, suitable content, and clear learning objectives. A systematic review by Valverde-Berrocoso et al. (2022) found that educational technology can improve academic performance, but the benefits depend on how technology is integrated into teaching and learning. Likewise, Staneviciene and Žekienė (2025) concluded that multimedia in higher education enhances student engagement, motivation, and performance when it is used with clear pedagogical strategies. Therefore, multimedia is most effective not because it is modern, but because it can support meaningful and well-designed instruction.

### **Effect of Multimedia on Academic Performance**

A central concern in the literature is whether multimedia instruction improves students' academic performance compared with traditional lecture-based teaching. Earlier studies suggest that multimedia-based education can positively affect academic achievement when it is properly developed and applied (Akinoso, 2018; Ilhan & Oruç, 2016). The argument is that images, sound, and visual presentation make content more understandable and can increase enthusiasm, innovation, and participation in the learning process which links multimedia with improved understanding and better academic performance in comparison with non-multimedia instruction.

Recent studies offer further support. Toktamysov et al. (2023) reported that digital technologies in history training contributed positively to students' academic performance. Malysheva et al. (2022) similarly found that digital and online approaches in history education increased student motivation and improved the learning experience. In addition, Darmawan et al. (2025) showed that digital history textbooks used within a living-history model significantly improved students' historical empathy, indicating that digital resources can strengthen deeper forms of historical understanding alongside measurable learning outcomes. Taken together, these studies suggest that multimedia can support academic performance in history when it is pedagogically aligned, content-focused, and thoughtfully implemented.

### **Problems with Multimedia-based Instruction**

Although multimedia has many advantages, the literature also identifies several problems in its classroom use. One problem is that multimedia materials are not always properly designed. Text, visuals, and audio need to be meaningfully integrated, especially when the content is complex. Poorly prepared slides or overreliance on presentation software may reduce critical discussion rather than improve learning. It is also pointing out that some teachers misunderstand multimedia instruction by treating PowerPoint alone as multimedia or by assuming that traditional teaching methods should be abandoned altogether.

Another challenge is the issue of teacher competence and institutional readiness. Lack of training, insufficient infrastructure, and unplanned investment can limit the effectiveness of multimedia-based instruction. These concerns remain relevant in recent literature. Staneviciene and Žekienė (2025) identified teacher preparedness, technical limitations, and access to resources as continuing barriers to the successful use of multimedia in higher education. Therefore, the effectiveness of multimedia depends not only on the availability of technology, but also on appropriate planning, teacher skill, and institutional support. In this light, multimedia should be viewed as a pedagogical aid rather than a substitute for thoughtful teaching.

Despite the importance of digital education is rising, there is a lack of mixed-method research on the impacts of it in history class in tertiary education. The contextual and fact-based studies in history classroom with script evaluation can address the existing gap in this field.

### **III. Method of the Study**

#### **Design**

For getting reasonable answers to the research questions, a mixture of both qualitative and quantitative research approaches was carried out. By this approach, a critical understanding of students' views regarding multimedia-based history class was developed. As students are the main actors in the active learning classroom, the opinions of those directly involved in multimedia-based class were supportive in getting first-hand experience of multimedia-centred history class.

More specifically, for research question one, a semi-structured questionnaire including both open-ended and close-ended questions was used to get the idea about students' views. For research question two, to understand the effect of multimedia on academic performance, a test was taken for both those who attended the multimedia classes (experimental group) and those who attended the traditional lecture-based classes (control group) on the same topic.

#### **Sampling Technique**

The second-year history students of Murarichand College, Sylhet, Bangladesh were purposively chosen for the convenience of the researcher. The population of the study was all one hundred (100) students of the second-year honours course in History enrolled at Murarichand College, Sylhet. Among them, only 59 students had more than ninety percent attendance in their classes from June 2024 to December 2024. For the convenience of the study, these 59 students were selected as the sample, as attendance in both lecture-based and multimedia-based classes needed to be ensured.

From these 59 students, 30 were randomly selected to attend multimedia-based classes, and the remaining 29 attended lecture-based classes. The same topic, *The Battle of Plassey-1757*, was taught to both groups. Five sessions of 45 minutes each on *The Battle of Plassey-1757* from the course *History of South Asia (1526–1765)* were delivered to each group.

#### **Method of Data Collection**

The survey data was collected with the consent from the respondents that it would be used only for research purposes and would be anonymous. Besides, a validation check was done with a 1-hour session with the respondents prior to finalize the questionnaire of the study. It is done for accuracy of the content of the questions and make a consistent data types across the semi-structured questionnaire.

A survey with a semi-structured questionnaire was conducted with the randomly selected second-year history students of Murarichand College. The questionnaire used for data collection was semi-structured in nature. There were a total of 20 questions in the questionnaire. Among them, six (No. 1 to No. 6) were multiple-choice close-ended questions, nine (No. 7 to No. 16) were Likert-scale questions, and the rest (No. 17 to No. 20) were open-ended questions on different dynamics of multimedia history class.

Besides, a test on the topic *The Battle of Plassey-1757*, which was covered in both the control and experimental groups through lecture method and multimedia-based class respectively, was taken to justify the difference in students' academic performance. A uniform question on the topic was set for both groups. The answer scripts of all sampled students of both groups were evaluated to see the difference in performance between the groups.

#### **Method of Data Analysis**

The responses of the students were scrutinised according to the objectives of the study. The responses to the questionnaire helped examine the research question regarding students' opinions about multimedia history class. Through Likert-scale analysis, the level of liking and disliking of multimedia history class was understood. Besides, document analysis of the answer scripts helped to understand the effect of multimedia class on academic performance. Mean score analysis with standard deviation has been analysed in different themes of the analysis so that the effectiveness of multimedia in history class can be assessed.

### **IV. Results and Discussion**

#### **Students' Opinion on Multimedia History Class**

Five multimedia classes on Battle of Plassey, 1757 were taken with randomly selected thirty second-year history students. After the classes, their views on the multimedia-based classes were collected through a semi-structured questionnaire. They were asked various questions regarding their opinions based on the experiences they gathered from the multimedia-based history classes.

#### **Multimedia-based classroom experiences before the experiment**

Among the respondents, eighteen students had no experience of multimedia class before. Only 40 percent of the respondents had some experience of multimedia class before, while 60 percent had no prior practical knowledge about multimedia classroom.

### **Interaction between teacher and students**

In the multimedia class, it is found that interaction between teacher and students is very high. Two-thirds of the respondents feel that the interaction between teacher and students during multimedia class is very good. Besides, about 27 percent of the students sense the class is good in terms of multimedia-based teaching practice. Also, in terms of teacher-student interaction, the survey portrays a 4.60 means score (on 0.62 standard deviation) informs classroom is very enjoyable for students learning with multimedia history class.

### **Multimedia experience**

The responses indicate that 26 out of 30 students (about 87 percent) think multimedia use is very good for their learning. Besides, the rest of the respondents also think multimedia is a good medium of instructional practice in the classroom.

### **Quality of the multimedia-based class**

Students at the history department at Murarichand College, Sylhet are accustomed to traditional instructional method. When the students were asked to comment regarding their experience of multimedia-based classes, about 87 percent replied positively. About 47 percent think the quality of multimedia teaching is very good and 40 percent think that the teaching quality is good. Only one respondent thinks that the teaching quality through multimedia is bad.

### **Multimedia as a source of meaningful data**

Regarding whether multimedia presents meaningful and relevant data in the classes they attend, 43 percent strongly agree that multimedia is significant in providing relevant data to the audience. Besides, 30 percent moderately agree that multimedia provided useful information relevant to the context of the topic, though 20 percent neither agree nor disagree with the matter.

### **Source of information**

Students found multimedia-based instruction a huge source of information. Sixty percent of the respondents strongly agree that multimedia presents a wide range of information which bolsters their learning process. Only one respondent disagreed. The mean score of 4.53 on 0.73 standard deviation, students responded that multimedia a vital tool for wide range of information for history class.

### **Realistic approach of multimedia**

About 47 percent of the students agree that multimedia provides realistic tasks. Eight respondents strongly approve that multimedia has been dealt with a realistic approach. However, about 17 percent neither agree nor disagree that multimedia can provide realistic tasks.

### **Multimedia as a quick learning tool**

Most of the students strongly believe that multimedia has the capacity to make things learned quickly compared to traditional lecture-based instructional technique. About 63 percent of the respondents opine that multimedia helped them learn history content within a short period of time compared to the traditional one. Only one respondent disagreed regarding the issue.

### **Multimedia's generation of new ideas**

Multimedia can have a positive impact on generating new ideas of the content. Twenty-one out of thirty respondents (70 percent) strongly approve that multimedia has the strength to create new knowledge through its process of instruction as a medium.

### **Miscellaneous views on Multimedia**

Most of the students in the survey think that videos attached to the PowerPoint slides are the most attractive feature of multimedia classes. Some respondents also emphasize the images included in the slides as an interesting feature. Few specifically argue that through audio-visual presentation, learning history content can be much easier. One student wrote, "The image of Nawab Sirajuddaula is the most attractive feature of the multimedia class."

Regarding suggestions for improvement, a significant number of students urge increasing video content in the multimedia class. Some also ask for a more comfortable classroom environment, as the classroom has no multimedia-oriented set-up. Most of the participants faced difficulties in understanding the language of the videos provided in the presentation slides. They think that if Bengali subtitle or dubbing was available, it would be more enjoyable. Some students also faced difficulties because they were not accustomed to this type of multimedia class, while a few felt overburdened with plenty of information through the classes.

### **Multimedia-based Class on Academic Performance**

#### *Multimedia class positively affects academic performance*

Students who attended the multimedia classes were asked about their opinion regarding the positive relation between multimedia-based class and academic performance. Most of the students think that multimedia-based class has a positive effect on academic performance. About 53 percent of the respondents believe multimedia-based class is a very good technique which positively affects academic performance in the history discipline. Only one respondent thinks multimedia-based history class is bad for academic performance. The mean

score of student's survey questionnaire on 'quality of teaching' is 4.23 (with 0.90 standard deviation) means multimedia is overwhelmingly positive in making history class in classroom environment.

#### *Test performance*

A 15-mark test was taken for both experimental group students, who attended multimedia classes, and control group students, who attended lecture-method classes. In that test, 60 percent of the experimental group students got ten or above marks, while in the control group only 23 percent got ten or above marks out of fifteen. Besides, among the top ten performers of the test, seven are from the experimental group, including the top three performers. This indicates that multimedia-based class has a positive impact on academic performance among the students. With the data from the survey, a mean score of 4.60 with 0.62 standard deviation means the students performed significantly better those who attended multimedia history class.

#### *Understanding level*

By analysing the answer scripts of the test, it is evident that the students from the experimental group have a better understanding of the content. For example, at least five students from the experimental group clearly explained the indirect causes of the Battle of Plassey in 1757. On the other hand, only two students from the control group critically discussed the causes of the Battle of Plassey in 1757.

#### *Visual effect*

In response to a question asking the students to explain the place where the Battle of Plassey occurred, 80 percent of the students from the experimental group clearly explained the location where the battle took place. On the other hand, only seven students from the control group could clearly explain the place. The reason here is perhaps that the multimedia-based class visually showed the map of the battle place, which was retained in the students' memory.

## **V. Conclusion**

### **Summary**

Multimedia enhances interaction between students and teachers through bolstering and increasing students' participation in learning. Multimedia works as a bridge between students and teachers by which participation as well as enthusiasm in the class has been increased (Li & Kang, 2014). Through the study, I had the opportunity to explore the pros and cons of multimedia-based history instruction. I realised that in the age of information and communication technology, multimedia can be an effective tool in the instructional practice of teaching history. In my experience with the study, I found that students are more enthusiastic and vibrant in the classroom when multimedia-based class is conducted. The Department of History of Murarichand College, Sylhet did not use multimedia-based class before, and the use of multimedia as an instructional method was taken by the students with great enthusiasm.

The study intended to understand the effectiveness of multimedia in the academic performance of history students. Though it is very difficult to generalize that multimedia is very effective for instructional practice, the study provides a notion that the introduction of multimedia in instructional practice might have a positive impact on students' performance.

### **Recommendations**

This study is limited in both scope and time. Within this limitation, it found that for understanding history at the tertiary level, multimedia is a very effective tool to be benefited from. Thus, for developing a well-equipped and meaningful class lecture with interactivity, multimedia can provide great support to those who want to make history contents more interactive. Recent evidence also supports the careful use of multimedia in higher education for improving engagement and learning outcomes when it is properly designed and implemented (Staneviciene & Žekienė, 2025). The findings of the study cannot be generalized due to the limited sample and time. However, the study has opened a new door in the context of Bangladesh for further research on the topic.

## **References**

- [1]. Akinoso, O. (2018). Effect of the use of multimedia on students' performance in secondary school mathematics. *Global Media Journal*, 16(30), 1–8.
- [2]. Barton, K. C. (1997). "I just kinda know": Elementary students' ideas about historical evidence. *Theory and Research in Social Education*, 25(4), 407–430. <https://doi.org/10.1080/00933104.1997.10505821>
- [3]. Britt, M. A., & Aglinskias, C. (2002). Improving students' ability to identify and use source information. *Cognition and Instruction*, 20(4), 485–522. [https://doi.org/10.1207/S1532690XCI2004\\_2](https://doi.org/10.1207/S1532690XCI2004_2)
- [4]. Brush, T. A., & Saye, J. W. (2002). A summary of research exploring hard and soft scaffolding for teachers and students using a multimedia supported learning environment. *The Journal of Interactive Online Learning*, 1(2), 1–12.
- [5]. Clarke, M. (2011). Framework for building an effective student assessment system (READ/SABER Working Paper No. 1). World Bank.
- [6]. Crosier, J. K., Cobb, S., & Wilson, J. R. (2002). Key lessons for the design and integration of virtual environments in secondary science. *Computers & Education*, 38(1–3), 77–94. [https://doi.org/10.1016/S0360-1315\(01\)00081-X](https://doi.org/10.1016/S0360-1315(01)00081-X)
- [7]. Darmawan, W., Kusmarni, Y., Pangestu, D. A., & Logayah, D. S. (2025). Developing living history model assisted by digital history textbooks in history learning to improve students' historical empathy. *Journal of Social Studies Education Research*, 16(2), 343–376.

- [8]. Ferretti, R. P., MacArthur, C. D., & Okolo, C. M. (2006). Teaching for historical understanding in inclusive classrooms. *Learning Disability Quarterly*, 29(1), 59–71. <https://doi.org/10.2307/1511296>
- [9]. İlhan, G. O., & Oruç, Ş. (2016). Effect of the use of multimedia on students' performance: A case study of social studies class. *Educational Research and Reviews*, 11(8), 877–882. <https://doi.org/10.5897/ERR2016.2741>
- [10]. Li, J., & Kang, M. (2014). Using multimedia to promote teaching effectiveness in the classroom of China. In *International Conference on Soft Computing in Information Communication Technology (SCICT)* (pp. 242–244). Proceeding Publisher.
- [11]. Malysheva, O., Tokareva, E., Orchakova, L., & Smirnova, Y. (2022). The effect of online learning in modern history education. *Heliyon*, 8(7), Article e09965. <https://doi.org/10.1016/j.heliyon.2022.e09965>
- [12]. Mendoza, G. L. L., Caranto, L. C., & David, J. J. T. (2015). Effectiveness of video presentation to students' learning. *International Journal of Nursing Science*, 5(2), 81–86. <https://doi.org/10.5923/j.nursing.20150502.07>
- [13]. Mohd Elmagzoub, A. (2015). For effective use of multimedia in education, teachers must develop their own educational multimedia applications. *Turkish Online Journal of Educational Technology*, 14(4), 62–68.
- [14]. Molebash, E. E. (2002). Constructivism meets technology integration: Be CUFA technology guidelines in an elementary social studies methods course. *Theory and Research on Social Education*, 30(3), 429–455. <https://doi.org/10.1080/00933104.2002.10473203>
- [15]. Saye, J., & Brush, T. (2002). Scaffolding critical reasoning about history and social issues in multimedia-supported learning environments. *Educational Technology Research and Development*, 50(3), 77–96. <https://doi.org/10.1007/BF02505026>
- [16]. Sousa, L. de, Richter, B., & Nel, C. (2017). The effect of multimedia use on the teaching and learning of Social Sciences at tertiary level: A case study. *Yesterday & Today*, (17), 1–22. <https://doi.org/10.17159/2223-0386/2017/n17a1>
- [17]. Staneviciene, E., & Žekienė, G. (2025). The use of multimedia in the teaching and learning process of higher education: A systematic review. *Sustainability*, 17(19), Article 8859. <https://doi.org/10.3390/su17198859>
- [18]. Stetson, E., & Williams, R. (2005). Learning from social studies textbooks: Why some students succeed and others fail. In G. Moss (Ed.), *Critical reading in the content area* (pp. 135–141). McGraw-Hill/Dushkin.
- [19]. Tokatmysov, S., Alwaely, S. A., & Gallyamova, Z. (2023). Digital technologies in history training: The impact on students' academic performance. *Education and Information Technologies*, 28(2), 2173–2186. <https://doi.org/10.1007/s10639-022-11210-5>
- [20]. Valverde-Berrocso, J., Acevedo-Borrega, J., & Cerezo-Pizarro, M. (2022). Educational technology and student performance: A systematic review. *Frontiers in Education*, 7, Article 916502. <https://doi.org/10.3389/educ.2022.916502>