



The Effects of Computer Aided Education in the Education of Folk Cultural Products

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ABSTRACT

This research explores the effects of computer-aided education (CAE) on the education of folk cultural products. Folklore, encompassing tangible and intangible cultural artifacts, holds significant importance in defining the identity and values of a community. CAE, utilizing multimedia software and interactive teaching methods, has emerged as a promising approach to enhancing student learning experiences. This study aims to investigate the impact of CAE on students' achievement, retention, cultural competency, and classroom participation in the domain of folk culture education. A quasi-experimental pretest-posttest control group design was utilized, with an experimental group of 32 1st grade students receiving CAE and a control group of 32 1st grade students receiving traditional teaching methods in Almaty, Kazakhstan. Various assessment tools were employed to measure academic achievement, cultural competency, and classroom participation. The results indicate that students in the CAE group exhibited significantly higher academic achievement scores, improved retention of knowledge, enhanced cultural competency, and increased classroom participation compared to the control group. These findings provide empirical evidence supporting the effectiveness of CAE in fostering effective and engaging education, particularly in the context of preserving and promoting cultural heritage through folk culture education.

KEYWORDS

Computer-aided education; folklore education; multimedia software; cultural competency; quasi-experimental design.

INTRODUCTION

"Folklore" emerges as a manifestation of the historical, social, and cultural transformations ushered in by the advent of modernity. It represents a significant facet of cultural existence, entrenched within specific societies while maintaining its vibrant essence. The material and immaterial folk cultural artifacts of a community embody the distinct identity of that community, encapsulating diverse elements that constitute its very essence (Çençen & Berk, 2014). These cultural expressions encompass a wide array of tangible and intangible heritages, such as music, dance, literature, craftsmanship, culinary arts, and other artistic forms, which encapsulate the unique identity, traditions, and values of a particular community or region (Kutlu, 2009; Mustafa & Saleh, 2017). Rooted deeply in a community's history, traditions, and beliefs, folk cultural products serve as a fertile source of inspiration for artistic expression and creativity (Sulaiman, 2011). Folk culture encompasses both material and immaterial components, comprising tangible and intangible cultural elements. The intangible aspects of a culture encompass its language, religion, customs, traditions, anonymous folk literary works, performances, rituals, and other expressions (Artun, 2000; Güvenç, 1994).

The realm of folklore intersects closely with various disciplines within the social sciences, defying precise demarcation. Alan Dundes (2003) aptly describes the subjects encapsulated by:

[...] folk culture, including oral narratives like myths, legends, fairy tales, folk stories, tongue-twisters, proverbs, riddles, idioms, slang, applause, taunts, jokes, insults, exchanges, ridicule, greetings, farewell statements, personal, animal and place names. Furthermore, folk poetry productions such as *mâni*, lullabies, and laments; social practices encompassing birth, marriage, death, holidays, celebrations, festivals, and commemorative days; folk music and instruments, children's games, and sporting activities; performance arts such as *meddah*, *karagöz*, middle game, and puppets; folk knowledge pertaining to folk medicine, folk architecture, folk law, folk cuisine, folk calendar, folk botany, folk mathematics, and folk veterinary medicine; and traditional handicrafts like clothing, adornment, and various forms of traditional craftsmanship such as tanning, felting, fence-making, rug-making, copperworking, tinning, leatherworking, and printing, along with their contemporary transformations (Dundes, 2003, p.11).

Folk cultural products hold distinctive significance in different countries, characterized by their unique attributes. In Kazakhstan, for instance, the term "folk literature," as a representative folk cultural product, has gained widespread usage and encompasses language-based materials such as instrumental and *tekke* poetry, as well as proverbs, epics, fairy tales, stories, jokes, riddles, myths, folk songs, laments, lullabies, and other similar manifestations, including those revolving around giants (Tuyakbayev, 2018). Folklore texts recounting tales of giants are prevalent in the folklore of Turkic peoples, preserving the archaic motif of human appearance on earth (Toyshanuly, 2009). Although Kazakh folk literature is predominantly

transmitted and created through oral culture, the emergence of written and electronic media has led to its documentation in these cultural domains, ensuring its continuity for future generations (Lazzat et al., 2019).

The formation of national identity is a multifaceted process influenced by numerous factors. In Kazakhstan, a young and independent nation, bolstering identity relies on fundamental elements such as individuals possessing a comprehensive understanding of their history and the systematic development of the country, an aspect deemed crucial within the state's socio-cultural memory. The modern cultural policy in place is designed to foster unity among the people of Kazakhstan by intertwining history and present reality, thereby creating and promoting new values (Kulsarieva et al., 2018). Folk cultural products serve as a vital component of our collective cultural heritage, offering a multitude of educational, social, and economic benefits. As the field of folklore research continues to emerge, it is imperative to situate it within a broader and more comprehensive framework of study. Education, in particular, has recognized the significance of folklore, and integrating it into the learning process has been a topic of interest (Aini & Winarno, 2022; Azam & Yatim, 2012).

The rapid advancements in information and communication technologies (ICT) witnessed in today's world have resulted in increased utilization of ICT in the realm of education, among other domains. Computers and ICT are widely employed to enhance educational opportunities (Bilgin et al., 2012). While education is a complex process necessitating meticulous management of human and technical resources, the concepts of teaching and learning have undergone fundamental transformations. Computer-aided education (CAE) is an instructional methodology that leverages multimedia software in single- or multiple-student settings. It capitalizes on the computer as a conducive learning environment, reinforcing the teaching process, motivating students, and merging the principles of self-directed learning with computer technology, enabling students to progress at their own pace (Engin et al., 2010). The primary objective of CAE is to enhance students' learning capabilities as well as increase the effectiveness and productivity of instructors through advanced computer-based technologies (Guney, 2015; Toluwa et al., 2021).

CAE encompasses several essential forms in education, including presentation tools, exercise and repetition tools, interactive teachers, and simulation-based activities. By delivering lessons through computer-assisted applications or animations, the learning experience becomes more engaging and enjoyable for students, resulting in heightened motivation and interest, a deeper understanding of the subject matter, and increased academic success (Ok et al., 2020). Arslan (2003) highlights that CAE facilitates the effective application of teaching principles such as immediate feedback, correction, and reinforcement, enhancing the learning-teaching process. Moreover, computers afford students the opportunity to engage in repeated practice tailored to their individual learning needs without the pressure of peer judgment or criticism.

The integration of CAE in education offers numerous advantages, including instant feedback to students, greater flexibility in learning, and the utilization of multimedia resources to enrich teaching methods (İmer, 2000; Troussas et al., 2019). Additionally, CAE fosters personalized learning experiences and self-directed study. However, caution must be exercised, as potential drawbacks accompany the use of CAE in education (Arslan, 2003; Demirer, 2006; Wu et al., 2020). One concern pertains to the potential reduction in social interaction and collaboration among students, impeding the development of interpersonal skills. Furthermore, concerns may arise regarding the quality and reliability of educational content provided through technological means, as well as the possibility of technological malfunctions or technical difficulties disrupting the learning process (Lim & Aryadoust, 2022; Taş et al., 2006).

Extensive research has been conducted to explore the effects of CAE on various aspects of education, including student attitudes, achievement, and retention. Several studies have investigated the impact of CAE on student achievement in diverse subjects, including the teaching of folk literature. In general, these studies indicate that CAE exerts a positive influence on student achievement, as it facilitates personalized and interactive instruction that caters to diverse learning styles and individual needs (Durán, 2011; Hayal, 2015; Malaş, 2011; Naba'h et al., 2009; San, 2003; Taşkın, 2004; Yılmaz, 2005; Zobar, 2010). However, when examining the existing literature in both Kazakhstan and other Turkish regions, it becomes evident that there is a paucity of studies investigating the impact of CAE on students' competence in folk cultural products (Nurdauletova et al., 2023; Ramachandran, 2004). The majority of these studies primarily focus on determining the reciprocal influence of traditional teaching practices and technological tools in teaching the Kazakh language and literature (Abrams & Sunshine, 2008; Hampel & Stickler, 2015; Kaleli, 2020). Despite the potential benefits of incorporating CAE and folk literature into education, there remain significant gaps in the literature that necessitate further investigation.

This research aims to contribute to the field by examining the influence of CAE on students' success, retention, class participation, and cultural competency in the domain of folk culture education. To achieve this aim, the study seeks answers to the following sub-problems:

- To what extent does the integration of CAE in folk culture education impact student achievement compared to traditional instruction?
- To what extent does the integration of CAE in folk culture education affect student retention compared to traditional instruction?
- To what extent does the integration of CAE in folk culture education influence students' cultural competency compared to traditional instruction?
- To what extent does the integration of CAE in folk culture education impact students' classroom participation compared to traditional instruction?

In conclusion, folklore represents an integral part of a community's cultural existence, encompassing tangible and intangible cultural products that define the identity, traditions, and

values of a particular community. Folk cultural products play a crucial role in preserving cultural heritage and have garnered increasing attention in the field of education. The integration of CAE in education has emerged as a promising approach to enhancing student learning experiences. However, there is a lack of research focusing specifically on the impact of CAE in the domain of folk culture education. By exploring these sub-problems, the research intends to shed light on the potential benefits and drawbacks of incorporating CAE into the teaching of folk cultural products. Moreover, it aims to assess the impact of CAE on students' overall engagement, retention of knowledge, cultural understanding, and active participation in the classroom. Addressing these research questions will contribute to a deeper understanding of the role of technology in fostering effective and engaging education, particularly in the context of preserving and promoting cultural heritage through folk culture education.

METHOD

The research was conducted utilizing a quasi-experimental pretest-posttest control group model, which is a well-established research design for examining the impact of interventions on various outcome variables (Ratelle et al., 2019). In this particular study, the primary focus was to investigate the effect of computer-aided education (CAE) on students' academic achievement, retention of knowledge, cultural competency, and classroom participation with regards to folk cultural products. The independent variables encompassed the utilization of CAE as the experimental condition and traditional teaching methods as the control condition. On the other hand, the dependent variables included students' academic achievement, retention of knowledge, cultural competency, and classroom participation.

To measure the impact of CAE on academic achievement and cultural competency, pretest and posttest assessments were conducted using achievement tests (AT) and cultural competency tests (CCT). Additionally, the measurement of retention of knowledge was performed by administering another round of achievement tests (AT) to both the experimental and control groups. To evaluate students' classroom participation, a Classroom Participation Form (CPF) was employed, enabling the assessment of their active engagement and involvement in the learning process throughout the duration of the courses.

Table 1

Research Design

Groups	Pre-test	Experimental Variable	Post-Test	Retention Test
CAE group	AT	X	AT	AT
	CCT	CPF	CCT	
TTG	AT	-	AT	AT
	CCT	CPF	CCT	

Table 1 provides a comprehensive overview of the research design, where the experimental group is denoted as CAE and the control group is represented by TTG (Traditional Teaching Group). The pretest and posttest measurements for achievement and cultural competency are indicated by AT and CCT, respectively. Moreover, AT is employed again to gauge the retention of knowledge within both groups. Finally, the Classroom Participation Form (CPF) is utilized to capture students' classroom participation.

By adopting this research design and employing various assessment tools, the study aimed to gain insights into the effectiveness of CAE in enhancing students' academic achievement, retention of knowledge, cultural competency, and classroom participation within the realm of folk cultural products. The findings of this investigation have the potential to contribute to the existing body of knowledge on integrating technology in education and shed light on the role of CAE in fostering a deeper understanding and appreciation of cultural heritage among students.

In the experimental group, the CAE method was implemented, utilizing Microsoft Movie Maker for the "Folk Culture" lesson. The contents (videos, audio files, texts, captions etc.) modifies and created via this application were presented to the students in an auditory and visual way, and directions were provided where necessary. The content and activities were related to students' daily lives, which helped capture their attention. Slides were prepared for the lesson, and instructions were given to the students for internet research and computer use. Interactive applications, puzzles, educational games, in-class activities, animations and simulations, video presentations, and visually rich content were employed. These operations were carried out by the researcher and completed in about three months. A pilot study was conducted to evaluate the feasibility and suitability of the research design and procedures before the main study. A different sample was used for the pilot study, comprising 47 (girl = 23, boy = 24) high school 1st grade students from a school located in the city center of Almaty, Kazakhstan. The pilot study involved implementing the computer-assisted lesson software and activities related to the "Folk Culture" lesson, similar to the main study. Feedback from the participants and teachers was collected to make necessary adjustments to the research instruments and procedures. The findings and adjustments from the pilot study provided valuable insights for the main study, ensuring a more refined and well-informed research process. The developed materials were reviewed by three academicians and two teachers, and new arrangements were made in the software according to their opinions.

Measurement tools were applied for the pre-test aspect before the experimental procedure. The experimental group underwent a 6-week period of CAE that was founded on the principles of constructivist learning. The control groups were subjected to traditional teaching techniques, which included lectures, question-and-answer sessions, and group discussions. Following the conclusion of the experimental interventions, the researchers utilized measurement instruments to conduct a post-test on both groups. It is important to

mention that the tests were conducted online, leveraging digital platforms to ensure ease of administration and data collection.

The sample for this research was selected from the population of high school 1st grade students in Almaty, Kazakhstan, during the 2023 academic year. The sample consisted of 64 high school students, with 31 girls and 33 boys, from a high school located in the city center of Almaty. To divide the participants into the experimental and control groups, a classification method was employed. The classification method involved randomly assigning the students to either the control group or the experimental group. Out of the total sample, 32 students, comprising 15 girls and 17 boys, were allocated to the control group. Similarly, the remaining 32 students, 16 girls and 16 boys, were assigned to the experimental group.

This random assignment ensured that the participants were distributed evenly across the two groups, minimizing any potential bias or confounding factors. It allowed for a comparative analysis between the control group, which received traditional teaching methods, and the experimental group, which received computer-assisted lesson software based on constructivist learning. By employing this classification method, the study aimed to evaluate the impact of the CAE method on students' learning outcomes and retention in the "Folk Culture" lesson.

Folk Cultural Products Achievement Test

In the context of a lecture on Kazakh Folk Culture, this is a scale designed to assess pupils' knowledge of the first-year high school curriculum.

In this study, a question bank comprised of multiple-choice questions pertaining to the topics in the "Folk Culture" lecture was developed in order to assess the subject knowledge of high school first-year students. Various sources, such as a textbook on Kazakh Folk Culture, Language, and Literature for the first year of high school, question banks related to this topic, and test papers were utilized in the creation of this question bank.

Multiple-choice questions covering "Folk Culture" lesson that are in line with the objectives of the course were prepared to determine the questions, and were presented to measurement and evaluation experts and subject teachers for their opinions. A 30 a-question multiple-choice test suitable for the level was developed and reviewed by experts. The test's reliability was studied as a pilot study on 64 high school 2nd grade students from several high schools throughout the 2022-2023 academic year.

The test's item difficulty and item discrimination indices were computed. Questions with item difficulty indexes ranging from 0.40-0.60 were preferred. Items with low item difficulty indices were re-evaluated based on topic instructors' feedback. 5 questions were re-evaluated and corrected, 8 questions were removed, and in the final stage, the number of questions was 22. Correct answers were coded as 1 and incorrect answers as 0. The item discrimination index of the test ranges from 0.42 to 0.84. The reliability coefficient was calculated as .77 through KR-20 (Kuder-Richardson) reliability analysis. The highest score a student can receive is "22" and the lowest is "0".

CPF is used to determine student classroom engagement throughout their courses. Researchers developed this observation tool to determine student participation in the lesson.

Cultural Competency Scale

In order to assess students' competence in Kazakh folk culture, researchers created this scale. In this process, some previously developed scales were examined to determine students' proficiency in folk culture. Composition works expressing the proficiency of a small group of students in folk culture and the opinions of two academics about Kazakh culture were utilized. After the statements were written, they were formatted into a scale, resulting in a 25-item proficiency scale that was available for use. There are a total of two items on the 5-point Likert scale, with 12 positive and 10 negative statements. These items were rated as "strongly competent," "partially competent," "undecided," "partially incompetent," and "strongly incompetent." After applying the scale, positive statements received a score of 5, 4, 3, 2, 1, and negative statements received a score of 1, 2, 3, 4, 5, respectively.

Researchers performed exploratory factor analysis (EFA) to determine the construct validity of the developed scale in the pilot application. According to EFA, the measurement tool had a one-dimensional structure. This one-dimensional structure explains approximately 53.2% of the variance in competence of students towards Kazakh Folk Culture. In order to determine the discriminant validity of the items in the scale, item-total correlations were examined. The item-total correlation values of the scale range between .287 and .609. As known, an item's corrected correlation coefficient being higher than .20 means that the item serves the purpose of the relevant factor significantly (Tavşancıl, 2010). As a result of the Cronbach's alpha reliability analysis, the reliability coefficient of the proficiency scale was found to be 0.89. According to these values, it can be said that the scale is reliable and valid (Büyüköztürk, 2002; Eroğlu, 2008).

Data Analysis

For the statistical analysis of the Folk Cultural Products Achievement Test and Cultural Competency Scale data, the mean, standard deviation, and t-test were utilized. The experimental and control groups' pre- and post-test achievement and competence averages were compared using a t-test on independent samples. Statistical analyses were conducted on a computer using the SPSS program. The level of significance was set at 0.05. The FCPAT was re-administered to the students two weeks later, and the independent samples t-test was used again. CPF is used to determine the classroom participation of students throughout the courses. Frequency (f) and percentage data (%) were evaluated in determining students' participation in the lesson.

FINDINGS

Table 2

Comparison of Pre-Test Achievement Scores between Experimental and Control Groups

	Group	N	Mean	Std. Deviation	t	P
Pre-Achievement	Experimental	32	9,10	2,60	-0,20	0,84
	Control	32	9,23	2,52		

Table 2 presents the comparison results of pre-test achievement scores in the field of folk culture education between the experimental and control groups. According to the T-test analyses, there was no significant difference found between the mean pre-test achievement scores of the experimental and control groups ($p > 0.05$). These findings indicate that both groups had similar levels of achievement in folk culture education before the experimental interventions.

Table 3

Comparison of Pre-Cultural Competency Scale Scores between Experimental and Control Groups

Test	Group	N	Mean	Std. Deviation	t	p
Pre-Cultural Competency Scale	Experimental	32	3,31	0,68	-0,92	0,35
	Control	32	3,45	0,50		

Table 3 displays the comparison results of Pre-Cultural Competency Scale scores in the field of folk culture education between the experimental and control groups. According to the T-test analyses, there was no significant difference found between the mean Pre-Cultural Competency Scale scores of the experimental and control groups ($p > 0.05$). These findings suggest that both groups had comparable levels of pre-cultural competency before the experimental interventions.

Table 4

Comparison of Post-Test Achievement Scores between Experimental and Control Groups

	Group	N	Mean	Std. Deviation	t	p
Post-Achievement	Experimental	32	15,05	2,29	3,76	0,000
	Control	32	12,84	2,40		

Table 4 presents the comparison results of post-test achievement scores, administered after a 6-week experimental intervention, between the experimental and control groups. According to the T-test analyses, a significant difference was found between the mean post-test achievement scores of the experimental and control groups ($p < 0.05$). These findings

indicate a significant increase in folk culture achievement for the experimental group after the experimental interventions. Computer-aided instruction resulted in a significant improvement in students' folk culture achievement compared to traditional instruction.

Table 5

Comparison of Retention Scores in Folk Culture Education between Experimental and Control Groups

	Group	N	Mean	Std. Deviation	t	p
Retention	Experimental	32	13,16	2,62	0,71	0,47
	Control	32	11,21	1,82		

Table 5 displays the comparison results of retention scores in folk culture education, measured through a retention test conducted 2 weeks after the post-test, between the experimental and control groups. According to the T-test analyses, a significant difference was found between the mean retention scores of the experimental and control groups ($p < 0.05$). These findings indicate that the students in the experimental group achieved significantly higher retention scores after the 2-week period with no intervention. Computer-aided instruction resulted in a significant increase in students' learning retention in folk culture education compared to traditional instruction. The graph below illustrates the pre-test, post-test, and retention scores of the experimental and control groups.

Figure 1

Comparison of Groups' Pre-test-Post-test and Retention Scores

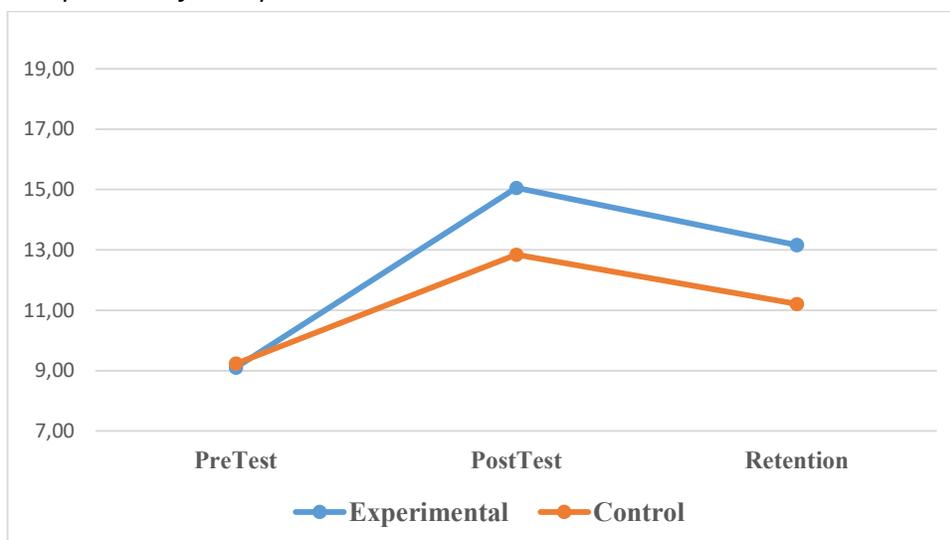


Table 6

Comparison of Post-Cultural Competency Scale Scores between Experimental and Control Groups

	Group	N	Mean	Std. Deviation	T	P
Post-Cultural Competency Scale	Experimental	32	3,98	0,75	3,45	0,001
	Control	32	3,87	0,54		

Table 6 presents the comparison results of post-cultural competency scale scores in the field of folk culture education between the experimental and control groups. According to the T-test analyses, no significant difference was found between the mean Post-Cultural Competency Scale scores of the experimental and control groups ($p > 0.05$). These findings suggest that, although both groups showed an increase in post-cultural competency, there was no significant difference between them.

In conclusion, the results of the study indicate that there was no significant difference in pre-test achievement scores and pre-Cultural Competency Scale scores between the experimental and control groups, suggesting that both groups had similar baseline levels.

Table 7

Comparison of Class Participation Rates of Students by Week

CPF	1. Week		2. Week		3. Week		4. Week		5. Week		6. Week	
	f	%	f	%	f	%	f	%	f	%	f	%
Exp. G.	12	54.54	15	55.55	18	58.06	25	62.50	27	60.00	30	68.51
Cont. G.	10	45.46	12	44.45	13	41.94	15	37.50	18	40.00	24	31.49
Total	22	100	27	100	31	100	40	100	45	100	54	100

The participation of the students in the lesson is shown in Table 7 on a weekly basis. According to the table, the participation rates of the experimental group students are higher than those of the control group students. The participation variable was obtained as a result of 6 weeks of observation, and the difference increased to %37 in the last week.

However, after the 6-week experimental intervention, the experimental group exhibited a significant improvement in post-test achievement scores and retention scores compared to the control group, indicating the effectiveness of computer-aided instruction in enhancing students' folk culture education. No significant difference was found between the groups in terms of Post-Cultural Competency Scale scores, suggesting that both groups experienced similar gains in cultural competency. These findings emphasize the positive impact of computer-aided instruction on students' academic performance and learning retention in the field of folk culture education.

DISCUSSION

Folk cultural products are distinguished by their unique aesthetics, expressive qualities, and communal values, which contribute to the formation of a collective identity and foster a sense of belonging within a community. Preserving the cultural heritage and transmitting values and traditions to future generations are essential functions fulfilled by folk cultural products.

The findings of this study indicate the presence of statistically significant disparities between the pre-test and post-test scores, as well as between the post-test and retention test scores, among students in the experimental group. Conversely, no statistically significant differences were observed between the pre-test and post-test scores, nor between the post-test and retention test scores, among students in the control group. Moreover, a significant disparity emerged between the post-test and retention test scores of students in the experimental and control groups following the experimental intervention in favor of the experimental group. The experimental group exhibited higher retention values compared to the control group. These results align with similar research conducted in the field of Kazakh cultural literature (Aminatun & Oktaviani, 2019; Csavdari et al., 2021; Dinara, Akzhigitova, & Zabrodskaia, 2022; Guncaga et al., 2022).

Based on these findings, it can be inferred that the notable difference observed in the experimental group can be attributed to the implementation of computer-assisted teaching methods during the experimental process. The employment of computer-assisted instruction (CAE) demonstrated a positive impact on students' academic achievement in the realm of folk cultural products and proved effective in terms of knowledge retention. Similar conclusions were reached by Yarar (2010) and Keser (2012) in their respective studies on the influence of CAE on students' academic achievement in the areas of culture and history. Moreover, Nurdauletova et al. (2023) investigated the effects of CAE on student achievement in oral culture, students' attitudes, and topics related to national values in social studies, while Tankut (2008) explored the impact of CAE on academic achievement in social culture and folklore subjects. Consistently, Yeşiltaş (2010) emphasized the ability of visual and auditory materials, such as pictures, photographs, graphics, maps, videos, and video slides incorporated within computer software, to create a multimodal learning environment that engages multiple senses and effectively enhances students' academic performance. Consequently, CAE and educational software have been recognized for their positive influence on students' academic achievement. The implementation of activities in a CAE environment has provided a strong stimulus in the classroom, and through versatile processes, students have interactively revisited, deepened, and given meaning to the objectives and behaviors related to topics in folk literature. In a sense, CAE applications have facilitated students' autonomy and personalized learning in a free environment, thereby enhancing their lasting acquisition of knowledge. Numerous studies have highlighted the significance of computer-assisted instructional activities guided by teachers in daily teaching processes (Altowairiki, 2021; Bas &

Kivilcim, 2021; Fletcher-Flinn & Gravatt, 1995; Jia, 2019; Sünbül, Gündüz & Yılmaz, 2002; Turunen, 2019; Zhussupbayev et al., 2023).

Furthermore, the research findings indicate that the cultural competence levels of students in the experimental group were not significantly higher compared to those of students in the control group. Additionally, the participation of students in the experimental group in class activities exhibited a notable increase. In addition to fostering academic success, CAE promotes the development of advanced cognitive skills, facilitating a deeper comprehension of subject matter rather than relying on rote memorization (Aslan, 2011; Durán, 2011; Coymak, 2019).

Güven and Sülün (2012) have highlighted several reasons behind the effectiveness of CAE in contrast to traditional teaching methods, including the utilization of visual and auditory stimuli, the provision of diverse learning environments through computer-mediated instruction, the enhancement of students' comprehension and retention abilities, and the promotion of high levels of motivation and engagement. By employing CAE methods, students can readily articulate and explain fundamental concepts while actively participating in discussions concerning more advanced subject matter (Güney, 2015).

The preservation and promotion of folk cultural products are crucial for maintaining cultural diversity and safeguarding cultural rights. Preserving unique cultural and historical artifacts necessitates the employment of cutting-edge technologies. State-of-the-art technologies should be embraced to comprehensively understand the intrinsic values held by the people of Kazakhstan and to effectively impart the principles of art and culture to future generations. Therefore, it is essential to explore the impact of computer-assisted instruction on the education and preservation of folk cultural products, as well as its broader social and cultural significance. In the near future, computer-based educational methods and models are poised to replace traditional teaching approaches. Consequently, comprehensive evaluation and development of education across all disciplines are imperative. Computer-aided techniques and courses constitute essential components of these advancements.

The implications of this study for further research in the Kazakh environment are manifold. Firstly, future investigations could delve deeper into the specific components and features of computer-assisted instruction that contribute to its effectiveness in enhancing academic achievement, cultural competence, and classroom participation in the context of folk cultural products. By identifying the key elements that yield the most significant outcomes, educational practitioners can optimize instructional design and implementation strategies.

Secondly, the examination of the long-term impact of computer-assisted instruction on students' retention of knowledge and cultural competency warrants attention. Longitudinal studies that track students' progress over an extended period would provide valuable insights into the sustained effects of this instructional approach.

Furthermore, exploring the potential variations in the effectiveness of computer-assisted instruction across different age groups, socioeconomic backgrounds, and regional contexts would contribute to a more nuanced understanding of its applicability and adaptability in diverse educational settings in Kazakhstan.

Moreover, investigating the role of teacher training and professional development programs in facilitating the integration of computer-assisted instruction in classrooms would be beneficial. Understanding the pedagogical strategies and support mechanisms necessary for teachers to effectively utilize technology-enhanced instructional methods can help overcome potential implementation challenges and ensure optimal learning outcomes.

Lastly, considering the cultural nuances and specificities of the Kazakh context, future research could explore the alignment between computer-assisted instruction and the preservation and promotion of Kazakh folk cultural products. This could involve investigating the ways in which technology can be leveraged to authentically represent and transmit cultural values, aesthetics, and traditions, while also encouraging active engagement and participation from students.

In conclusion, this study highlights the positive effects of computer-assisted instruction on students' academic achievement, cultural competence, and classroom participation in the domain of folk cultural products. These findings have significant implications for educational practices in Kazakhstan, emphasizing the need to embrace technological advancements and adapt instructional approaches to effectively preserve and promote cultural heritage. Continued research in this area will contribute to the enhancement of educational methodologies and the holistic development of students in the Kazakh context.

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