International Journal of Academic Pedagogical Research (IJAPR)
ISSN: 2643-9123
Vol. 8 Issue 8 August - 2024, Pages: 81-86

The Effect of Inquiry Based Audio Visual Podcasts on Students' Creative Thinking Skills in History Subject

Ira Sugiarnik1, Nurul Umamah2* , Sumardi3

1University of Jember, Indonesia
2Department of History Education, University of Jember, Indonesia,
*nurul70@unej.ac.id ORCID ID 0000-0002-3589-5014
3Department of History Education, University of Jember, Indonesia

Abstract: *This study examines the use of inquiry-based audio-visual podcasts on the creative thinking skills of 11th grade history students at Pakusari State Senior High School. The study population was all 11th grade students from XI1 to XI8 totaling 278 students. Through a homogeneity test, four classes were selected that had almost the same average scores as samples. Classes XI1 and XI3 acted as experimental groups with 68 students, while classes XI5 and XI6 acted as control groups with 68 students. This study used a quasi-experimental design and was analyzed using ANCOVA. The results showed that the use of podcasts significantly improved students' creative thinking skills (sig 0.00 and 0.001). The effect size was in the medium category with a partial eta square of 0.084 for creative thinking skills. The average score of the control class using problem-based learning PowerPoint media was 77.841 for creative thinking skills. The experimental class using podcast media had an average score of 87.918 for creative thinking skills. In conclusion, the use of inquiry-based podcasts has a significant impact on students' creative thinking skills, making it an effective alternative in history education at the secondary school level. Therefore, audio-visual podcasts are recommended as a history teaching medium that prioritizes creative thinking skills.*

Keywords: History Subject, Audio-Visual Podcast, inquiry model, creative thinking skills

1. INTRODUCTION

Technology plays an important role in modern learning. The use of technology has had an impact on all aspects of learning (Umamah, et al., 2021). Integration of technology is key in modern learning to gain broader knowledge and information in various fields of learning (Laili, 2019). The development of technology in education is inseparable from the Industrial Revolution 4.0, which encourages creative and innovative learning approaches by utilizing technological advances (Peredrienko et al., 2020). The advancement of digital technology has become an important part of everyday life, and the use of technology for the benefit of society has triggered an industrial revolution known as society 5.0 (Salimova et al., 2019; Pereira et al., 2020). In the context of education, the use of digital gadgets is a new challenge that requires the integration of information technology as a major component in modern society education. The use of technology is important and inseparable from the learning environment of Generation Z. They prefer accelerated learning according to their needs (Moore et al., 2017). Therefore, educators need to be skilled in exploring digital applications, packaging teaching materials digitally, and delivering learning with technology. Old ways must be abandoned so that learning is more interesting and effective. Educators need to utilize digital technology so that students can learn faster and more effectively. In addition, this technology can also change learning that is usually boring and less innovative to be more fun and interesting (Yoo, 2021). As learning facilitators, educators are able to integrate technology, pedagogy, and content according to the demands of the independent curriculum. The Independent Learning Curriculum designs autonomous, flexible, innovative, adaptive, and responsive learning to help students optimize their potential (Umamah, et al. 2021). The implementers of the independent learning curriculum adapt to 21st century conditions (Indarta et al, 2022) by emphasizing 4C skills (Umamah et al, 2020; Rais et al, 2021). The 4Cs in question are Critical Thinking Skills, Creative Thinking Skills, Collaborative Skills, and Communication Skills (Romero, 2016; Bedir, 2019; Khoirunnisa, Umamah & Sumardi, 2019; Umamah et al, 2020; Rais et al., 2021). These skills must be deliberately taught and prioritized in several national education systems (Sullivan et al., 2021). Based on the explanation of the 4C skills, the selection of focus on the creative thinking aspect is a discussion that is strongly related to this study. One of the most important skills that students must acquire is creative thinking. Creative thinking is a person's ability to generate new ideas with fluency, flexibility, and originality (Dilekci & Karatay, 2023). The creative thinking process aims to produce new ideas or ideas (Hakan Türkmen, 2019). Several studies have stated that creative thinking skills are still relatively low. In the research of Kamalia & Ruli., (2022), Rachman & Amelia., (2020), Rasnawati et al., (2019), Siswono., et al (2021), Salam & Wahyuni (2021), Armdi & Sihabbudin (2021) Hidayati N., et al (2022), Nurjannah., et al (2023), shows the percentage of creative thinking skills of history students is still very low. From the description above, action is needed in learning in the form of implementing innovative learning media (Albar & Sari, 2021). One of them is Podcast learning media (Goldman, 2018). This is also related to history learning, where education in schools does not provide enough space for students'

creative skills. In line with the results of history subjects, which still appear very low, there are several factors that influence learning outcomes.

Observation results show that students often feel that history is not relevant to their current needs and lives. They are less interested in learning history (Iqrima, B., et al., 2020). One solution proposed is to present historical content in a way that is more contextual and relevant to today's life. Research conducted by Hidayanti, P. N. (2021) shows that changes in the approach to learning history, where the focus is shifted from educators to students, have a significant impact. Students show an increase in critical, creative, and collaborative thinking skills.

Learning media that can improve Creative Thinking skills is Audio-Visual Podcast media. Podcasts are the right Audio-Visual learning media in utilizing history learning (FeHennig, 2017). Podcasts can be effective in increasing engagement in.

2. LITERATURE REVIEW

2.1 Audio-Visual Podcasts

Podcasts are an effective and efficient learning medium. Goldman (2018) also emphasized that the presence of podcasts does not replace textbooks, quizzes, and other materials. However, its presence is also significant as a supplement in learning. In line with Frydenberg (2006) and Nathan & Chan (2007) who stated that the purpose behind the use of podcasts can be divided into 3 categories, namely: increasing flexibility in learning, increasing learning accessibility, and enriching students' learning experiences. Donnelly & Berge (2006) stated that Podcasts can provide interesting advantages and benefits, compared to other technological devices. Podcasts are listened to while doing multitasking activities, for example when learning with vision and hearing abilities. This is the advantage of podcast technology, because it can be used anywhere and anytime. The influence of Audio-Visual Podcast media on history learning is very practical and flexible, not bound by distance and time, allowing students to listen to the material repeatedly, making it more effective for understanding history learning materials (Fehennig, 2017). Podcast is an Audio-Visual learning media that can play a role in learning potential, especially in history (Phillips, 2017). Podcasts allow students to easily review historical material for exams or study material they missed due to absences (Goldman, T., 2018). The rise of Podcasts in education provides learning opportunities that can increase the effectiveness of history learning (Vandenberg, 2018). Podcasts can also be downloaded on any computer or cellphone; therefore, Podcasts can be listened to anywhere and anytime and make it easier for students to listen while doing other activities. This makes history learning outside the classroom more relevant. Audio-Visual Podcast media itself has 4 characteristics (Bongey, Cizadlo, & Kalnbach, 2006) including: (1) Storytelling, Storytelling in podcasts can make learning more interesting and easier to understand. (2) Spreadability, Podcasts can be easily accessed and can be distributed among students and educators. (3) Episodic (Episodic), Episodic format can help educators plan structured teaching. (4) Flexibility (Flexibility): Flexibility in accessing podcasts allows students to learn anytime and anywhere.

2.2 Creative Thinking Skiils

Creative thinking is a person's ability to generate new ideas with fluency, flexibility, and originality (Dilekci & Karatay, 2023). The creative thinking process aims to generate new ideas or ideas (Hakan Türkmen, 2019). Here are how indicators of creative thinking skills, namely fluency, flexibility, elaboration, and originality (Guilford JP, 1950), can be realized in the context of learning using podcasts:

1.) Fluency: Podcasts can help students improve their speaking skills.

2.) Flexibility: Podcasts allow for a variety of approaches to conveying information.

3.) Elaboration: Students can develop their ideas by providing more in-depth details, examples, and explanations through podcasts.

4.) Originality: Podcasts provide space for students to generate original and different ideas.

3. METHOD

3.1 Research design

This research will be conducted at SMAN Pakusari in the 2023/2024 academic year. The population in this study were all students of SMAN Pakusari in grade XI of the even semester of the 2023/2024 academic year consisting of X1, X2, X3, X4, X4, X5, X6, X7, X8. The determination of the experimental class was not selected randomly, but by conducting a homogeneity test and calculating the daily history test for grade XI. The research sample was selected from four classes that had almost the same average scores, so that classes XI1, XI3 as experimental classes with a total number of students of 68 people and classes XI5, XI6 as control classes with a total number of students of 68 people.

The research design used quasi-experimental. Experimental research includes studies on the effect of systematic manipulation of one variable (independent variable) on another variable (dependent variable) (Ary et al, 2010:28). This study uses a pretest-posttest non-equivalent group design.

Table 1.
Pretest-posttest non-equivalent group design
(Cohen et al., 2018)

Class	Pretest	Treatment	Posttest
Experiment	O_1	Podcast Audio-Visual Media based on the Inquiry	O_2

Control	O_3	Media Powerpoint model based on the Problem Based Learning model	O_4

Information:
O1: Pretest of experimental class before treatment
O2: Posttest of experimental class after treatment
O3: Pretest of control class before treatment
O4: Posttest of control class after treatment

Based on the design applied in this study, it includes two control classes and two experimental classes. Pretests related to creative thinking skills and learning outcomes will be given to the four classes to determine the initial abilities of the four classes. The experimental group was given treatment from Podcast learning media based on the inquiry model. While the control group was given treatment from power point. Media based on the problem-based learning model. After the treatment was carried out, the four classes were then given a posttest with the same questions to assess the final results.

3.2 Data Collection and Research Instruments

Data collection in this study used documentation and test techniques. The documentation technique was carried out by collecting existing data such as data on the number of class XI students as research objects and data on students' daily test scores in the History subject. Then the test was used to measure creative thinking skills in the form of a performance test by creating a product in the form of an infographic that was given a score of 4 if correct.

The research instrument to measure historical analysis skills was in the form of a performance test by creating a product in the form of a paper that was given a score of 4 if correct in each component. The test was carried out 1 time, namely at the time of the posttest to measure students' historical analysis skills.

3.3 Data analysis method

The data analysis method in this study uses parametric data analysis with the help of SPSS 23 for Windows software. In the data analysis, a normality test, regression homogeneity test and linearity test were first carried out as a requirement for the analysis prerequisite test. The normality test aims to determine whether the data is normally distributed or not. Normality testing uses the Kolmogorov-Smirnov test with the help of SPSS 23 for Windows software. With a significance level of $\alpha = 5\%$ (0.05), if the significance is <0.05, then the data distribution can be said to be abnormal. Conversely, if the significance is >0.05, then the distribution can be said to be normal. The homogeneity test aims to ensure that the data from each of the two class samples has the same variance based on the results of daily tests. The homogeneity test criteria if sig>0.05 then the data distribution is called homogeneous and if sig<0.05 then the data distribution is called heterogeneous. The Linearity Test is carried out to determine the linear relationship between the covariate and the dependent variable. The decision making of linearity test is if the significance value of the covariate is less than 0.05 then there is a linear relationship between the dependent variable and the pretest as its covariate. If the significance value of the covariate is more than 0.05 then it is said that there is no linear relationship between the covariate and the dependent variable. Then for hypothesis testing using ANCOVA (Analysis of Covariance) with the help of SPSS version 25. ANCOVA is used to test whether there is a significant difference between the average groups that are not related to the pre-test value as a covariate. This test aims to see the effect of audio-visual media podcasts based on the inquiry model on students' creative thinking skills. The decision is made based on the significance value: if it is more than 0.05, then the null hypothesis is accepted, and if it is less than 0.05, the null hypothesis is rejected.

4. FINDINGS

The following are the results of the analysis prerequisite tests which include normality tests, regression homogeneity tests and linearity tests then continued with ancova tests.

Table 2.
Normality Test

Class		*Kolmogrov-Smirnov*		
		Statistic	Df	Sig.
Creative Thinking Skills	*Pretest* Experiment	0,107	68	0,051
	Postest Experiment	0,107	68	0,051
	Pretest Control	0,107	68	0,051
	Postest Control	0,107	68	0,051

(Source: processed primary data)

Based on the decision-making criteria that the significance value is above 0.05, the data is said to be normally distributed. Seeing the results of the significance of Creative Thinking Skill in the control and experimental classes shows the significance value above 0.05, meaning that both pretest and posttest data in both classes are normally distributed.

Table 3.
Regression Homogeneity Test

Data	*Type III Sum of Squares*	*df*	*Mean Square*	F	Sig.
Kelas * Pretest	0,004	1	0,004	0,009	0,925

(Source: processed primary data)

Based on the data presented above, it shows the results of the creative thinking skill regression homogeneity test with a significance value (0.925 > 0.05). So it can be concluded that the results of the creative thinking regression homogeneity test are greater than the significance level of

0.05, so that the assumption of homogeneity of the regression is met.

Table 4.

Linearity Test

Source	*Type III Sum of Squares*	*df*	*Mean Square*	F	Sig.
Pretest	5,060	1	5,060	12,082	0,001

(Source: processed primary data)

Based on the data presented, the significance value of Creative Thinking Skills ability is 0.001. The value is less than 0.05, so it can be concluded that the linearity assumption is met. Thus, through the test results, the pretest variable has a strong enough reason as a covariate.

Hypothesis Testing

Hypothesis testing is carried out to answer the formulation of the research problem. In this study, the pretest and posttest data from the experimental class and the control class will be tested for hypotheses using ANCOVA (Analysis of covariance) assisted by the SPSS 25 for Windows software program. Hypothesis testing in this study is a significant influence on creative thinking skills and learning outcomes that are taught using audio-visual podcast media based on the inquiry model in history subjects. As for decision making:

a. If the significance value is more than 0.05 (> 0.05) then H0 is accepted, and Ha is rejected.

b. If the significance value is less than 0.05 (<0.05) then H0 is rejected, and Ha is accepted.

Table 5.

Results of Between Subject Effect Creative Thinking skills Test

Tests of Between-Subjects Effects

Dependent Variable: Postest

Source	Type III Sum of Squares	Df	Mean Square	F	Sig.	Partial Eta Squared
Corrected Model	6778,842[a]	3	2259,614	5396,014	,000	,992
Intercept	34,687	1	34,687	82,834	,000	,386
Media Pembelajaran	5,060	1	5,060	12,082	,001	,084
Pretest	1032,838	1	1032,838	2466,443	,000	,949
Error	55,276	132	,419			
Total	941084,000	136				
Corrected Total	6834,118	135				

a. R Squared = ,992 (Adjusted R Squared = ,992)

(Source: processed primary data)

Based on table 5, the results of the ancova test are presented to determine the effect of audio-visual podcast media on students' Creative Thinking Skills. In the table, the R Squared and Adjusted R Squared values are 0.992. This shows that 99.2% of the variability in the posttest results can be explained by a model that includes the pretest and learning media. In other words, the regression model used is very good at explaining data variability. With such a very high value, it can be concluded that the model used is very strong and is able to explain almost all the variability in the posttest results. This shows that the pretest and learning media variables have a very significant influence on students' creative thinking skills. The results in the corrected model column show a significance value of 0.000 (0.000 <0.05), so simultaneously the pretest and learning media have an influence on students' Creative Thinking Skills. Furthermore, the results of the learning media column show a significance value of 0.001 (0.001 <0.05) so that H0 is rejected, and Ha is accepted, the conclusion is that there is a significant influence of the application of inquiry-based Audio-Visual Podcast media on the creative thinking skills of students in history subjects. The magnitude of the influence of learning media on students' creative thinking skills can be seen in the partial eta squared column which shows a value of 0.084 included in the moderate effect category.

Table 6.

Effect Size Criteria

Value	*Effect Size*
0,01	Small Effectt
0,06	Moderate Effect
0,14	Large Affect

(Source: Cohen:1998)

The test to see the influence between the two media applied to the experimental and control classes, namely the Audio-Visual Podcast media based on the inquiry model and the Powerpoint media based on the problem-based learning model, can be seen in the output estimates marginal means presented in the following table.

Table 7

Results of Estimates Marginal Means (Creative Thinking Skills)

Estimates

Dependent Variable: Postest

Media Pembelajaran	Mean	Std. Error	95% Confidence Interval	
			Lower Bound	Upper Bound
Experiment Class	87,918[a]	,089	87,742	88,094
Control Class	77,841[a]	,089	77,665	78,017

a. Covariates appearing in the model are evaluated at the following values: Pretest = 71,88.

Based on table 7. shows the results of the estimated marginal means in the control class with a mean value of 77.841 which applied the powerpoint media based on the problem-based learning model. The experimental class has a mean value of 87.918 with the application of audio-visual podcast media based on the inquiry model. So, it can be concluded that audio-visual podcast media based on the

inquiry model has a greater influence on students' creative thinking skills than powerpoint media based on the problem-based learning model.

5. DISCUSSIONS

The results of the study provide an overview that creative thinking skills can be improved through audio-visual podcast media. Podcasts are an innovation in learning. Podcasts have an influence on creative thinking skills (Creative Thinking skills) as evidenced by Chan, (2007) who tested that one of the uses of podcasts is Flexibility in learning. Where Flexibility is an indicator of Creative Thinking Skills. Fietze, S., (2010) stated that Podcasts are a form of storytelling and can increase opportunities for creative academic learning because they can provide new ways to express ideas or ideas. Podcasts are very positioned in the four 21st century skills (Bonini, T. (2015). 21st century skills in the form of 4C, namely Collaboration (students' ability to work together), Creative Thinking (creative thinking skills), Communication (communication skills), and Critical Thinking (critical thinking skills) (Wegerif, 2018; Vacide, E. 2019: 114; Howlett, G., et al. 2019). So, Podcasts have a great influence on Creative Thinking Skills. Podcasts can be effective in increasing the involvement of creative thinking skills and student reflection (Baird & Fisher. 2006). Podcasting can also make learning more interesting for a diversity of students and can result in greater inclusivity (Cebeci & Tekdal. 2006). Lalli & Zingone (2021) generally tested the podcasting experience can develop students' creativity skills in two areas: (a) creativity skills related to the use of recording and editing tools; (b) a whole series of creativity skills that can be summarized in communication skills regarding agenda setting events and news, selecting topics for specific targets, searching for reliable and authoritative sources, content analysis, presenting case histories, and their various critical opinions. Learning with Podcasts is an effective way to facilitate the learning process (Tanwir., et all, 2023). Audio-Visual Podcast Media has a high appeal because the presentation displayed is in the form of images accompanied by sound, so that the senses of hearing and sight can respond, and creative thinking skills (Creative Thinking skills) emerge in students during learning (Madiope & Maria, 2013).

6. ACKNOWLEDGMENT

The author would like to thank the educators who have given permission and helped in the research process and the cooperation of students in grades XI1, XI3, XI5 and XI6. In addition, the author would like to thank all parties who have contributed and supported during this research.

7. REFERENCES

[1] Albar, B. B., & Sari, I. M. (2021). Learning technology development through podcasts for auditory learning styles. Proceedings of the 3rd International Conference on Educational Development and Quality Assurance (ICED QA 2020), 170–174. https://doi.org/10.2991/assehr.k.210202.030

[2] Ary, D. et al. (2010). Introduction to Research in Education. 8th ed. USA: Wadsworth.

[3] Asmi, A.R., Dhita, A.N., Supriyanto. (2019). Pengembangan media pembelajaran audio berbasis podcast pada materi sejarah lokal di Sumatera Selatan. HISTORIA: Jurnal Pendidik dan Peneliti Sejarah, 3(1), 49-56.

[4] Beghetto, R. A., & Kaufman, J. C. (2020). Nurturing Creativity in the Classroom. Cambridge University Press.

[5] Bongey, S. B., Cizadlo, G., & Kalnbach, L. (2006). Explorations in course-casting: podcasts in higher education. https://doi.org/10.1108/1065074061071410

[6] Bonini, T. (2015). The Second Age Of Podcasting. In T. Bonini, Reframing Podcasting as A New Digital Mass Medium (pp. 21-30). London: Routledge

[7] Chan, A., Lee, M.J.W., & McLoughlin C. 2006. Everyone‟s Learning With Podcasting: A Charles Sturt University Experience. Proceeding of the 23rd Annual Ascilite Conference: Who‟s Learning? Whose Technology? The University of Sidney.

[8] Dileckci, A., & Karatay, H. 2023. The effects of the 21st century skills curriculum On the development of students' creative thinking skills. Continental Journal of Educational Research

[9] Eragamreddy,N.(2013). Teaching Creative Thinking Skills. IJ-ELTS: International Journal of English Language & Translation Studies Vol: 1, Issue: 2

[10] Evans, C. (2008). The effectiveness of m-learning in the form of podcast revision lectures in higher education. Computers & Education, 50(2), 491–498

[11] FeHennig, N. (2017). Podcasts in context. Library Technology Reports, 53(2), 30 38,2.

[12] Fernandez, V., Simo, P., & Sallan, J. M. (2009). Podcasting: A new technological tool to facilitate good practice in higher education. Computers & Education, 53(2), 385–392

[13] Fernandez, Vicenc. Jose M Sallan & Pep Simo. 2015. Past, Present and Future of Podcasting in Higher Education. In book: Exploring Learning & Teaching in Higher Education

[14] Geoghegan, M. W., & Klass, D. (2008). Podcast solutions: The complete guide to audio and video podcasting. Apress

[15] Goldman, Thomas, "The Impact of Podcasts in Education" (2018). Pop Culture Intersections. 29

[16] Guilford, J.P. (1950) Creativity. American Psychologist, 5, 444-454

[17] Hutabarat, PM. 2020. Pengembangan Podcast sebagai Media Suplemen Pembelajaran Berbasis Digital

pada Perguruan Tinggi. Jurnal Sosial Humaniora Terapan. Volume 2. No.2

[18] Phillips, B. (2017). Student-Produced Podcasts in Language Learning – Exploring Student Perceptions of Podcast Activities. IAFOR Journal Of Education, 5(3), 157-171

[19] Reiman, R. A. (2021). Podcasting for teaching and research in history: A case study. In S. Jackowicz & I. Sahin (Eds.), Proceedings of IHSES 2021 International Conference on Humanities, Social and Education Sciences (pp. 1-10), New York, USA. ISTES Organization

[20] Rime, J & Collins, T. (2022). What is a podcast? Considering innovations in podcasting through the six-tensions framework. Convergence Volume 28, Issue 5, Article Reuse Guidelines

[21] Umamah, N., Surya, R. A., & Bayu, A. P. (2021). Pengembangan Sumber Belajar Inovatif Berbasis Google Classroom pada Pembelajaran Sejarah untuk Meningkatkan Analytical Skills Menggunakan Model Assure. Jurnal Hasil Penelitian Universitas Jember. 1(1), 16–24.

[22] Umamah, N. (2019). Desain Pembelajaran. Malang: Intelegensi Media.

[23] Umamah, N. (2017). Pembelajaran Sejarah Kesiapannya Menghadapi Tantangan Zaman. Kapita Selekta (Pendidikan) Sejarah Indonesia. Yogyakarta: PenerbitOmbak.

[24] Umamah, N., Surya, R. A., & Muffida, E. 2021. Teachers' ability analysis of developing innovative instructional design. In IOP Conference Series: Earth and Environmental Science (Vol.747, No.1,p.012070). IOP Publishing.

[25] Umamah, N., Subchan, W., Puji, R. P. N., & Mahmudi, K. 2021. Assessing Prior Knowledge and Needs Assessment for Virtual Laboratorium Development. In IOP Conference Series: Earth and Environmental Science (Vol. 747, No.1, p. 012094). IOP Publishing.)

[26] Walls, S. M., Kucsera, J. V., Walker, J. D., Acee, T. W., McVaugh, N. K., & Robinson, D. H. (2010). Podcasting in education: Are students as ready and eager as we think they are?. Computers & Education, 54(2), 371–378.

[27] Yuste BC & Pena, C. 2023. Podcasts' effects on the EFL classroom: a socially relevant intervention. Smart Learning Environments

[28] Yoo, H. 2021. Research-to-Resource: Use of Technology to Support 21st Century Skills in a Performing Ensemble Program. Update: Applications of Research in Music Education, 39(2), 10–14.