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A Google Sites-Based Virtual Gallery: A Means of Arts and Culture Appreciation for Middle School Students

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ABSTRACT

The low level of student appreciation for arts and culture subjects and the limitations of conventional learning media in documenting and exhibiting student works on an ongoing basis often hinder the interactive teaching and learning process. This study aims to determine the effect of using a Google Sites-based virtual gallery on students' level of art and culture appreciation, describe student responses, and identify the advantages and disadvantages of this media in learning. This study uses a quantitative approach with a pre-experimental method through a one-group pretest–posttest design. The research subjects consisted of 30 students selected from one class. Data collection techniques include art appreciation tests (pretest and posttest), student response questionnaires, observations, and interviews. Quantitative data analysis used the Shapiro–Wilk normality test and paired sample t-test through the SPSS program version 25, while qualitative data were analyzed descriptively. The results showed an increase in the average value of student appreciation from 55.60 in the pretest to 59.27 in the posttest. The paired sample t-test produced a significant value of 0.011 ($p < 0.05$), which proves the positive and significant influence of the implementation of the virtual gallery on students' art appreciation. Student responses were in the positive category for the learning material, media display, and technical aspects. The advantages of this media include ease of access and increased motivation to learn, despite its dependence on internet connection and limited interactive features. Contribution: This study provides a contribution in the form of recommendations for the use of Google Sites-based virtual galleries as an effective alternative learning medium to increase appreciation of arts and culture at the junior high school level.

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1. INTRODUCTION

The massive advancement of digital technology in this decade has triggered fundamental transformations in various aspects of life, including the education sector (Timotheou et al., 2023; Wang et al., 2024). Education today is no longer simply a

process of transferring knowledge but has evolved into an effort to develop individual potential integrated with technological skills (Shahrezaei et al., 2024). In the Indonesian context, arts and culture education plays a strategic role in character formation, fostering creativity, and nurturing students' aesthetic appreciation (Sari & Wahyudi, 2026; Tejo et al., 2025). This aligns with the mandate of the National Education System Law No. 20 of 2003, which emphasizes the holistic development of students' potential to become knowledgeable, capable, creative, and independent individuals.

However, arts and culture education is often considered a secondary discipline compared to science or mathematics (Sanz-Camarero et al., 2023). Yet, in the era of Industry 4.0 and Society 5.0, creative thinking and sensitivity are core competencies required for innovation (Suciu et al., 2023). The greatest challenge in arts education today is how to bridge the gap between traditional, physical practices and digital media that can broaden students' reach (Pavlou & Castro-Varela, 2024; Shi, 2025).

Appreciation is the heart of arts education. Without it, creative activities will become meaningless, technical routines (Wildemeersch, 2019). The reality found in the field, particularly at the junior high school level, shows a wide gap between the process of student work production and the publication or exhibition stage.

A preliminary study by researchers at Middle School 5 Pallangga, Gowa Regency, uncovered a concerning phenomenon related to the management of student work. The artworks produced by students throughout the semester often end up on teachers' desks to be graded, then piled up in a corner of the laboratory or staff room. In some cases, only one or two of the best works are displayed on classroom walls, while hundreds of others are returned to students to take home, ultimately being damaged or lost due to the lack of an adequate storage system.

This situation has a negative psychological impact on students' intrinsic motivation. When students feel that their painstakingly crafted work is not given the space it deserves, they tend to view arts and culture assignments as merely an administrative burden (Adler, 2017; Nathan, 2018). The learning process reduces the aesthetic and emotional value to mere report card grades. The lack of physical exhibition space in schools, limited land, and the operational costs of conventional exhibitions are classic obstacles that continue to recur without concrete solutions.

We need a breakthrough in inclusive, affordable, and sustainable media to break the cycle of "wasted works." A potential platform that can serve as a virtual gallery is Google Sites (Rahmawati et al., 2022; Zalukhu et al., 2025). Unlike linear social media platforms, Google Sites allows teachers and students to organize exhibitions in a systematic structure, similar to curation in a professional museum (Rahmawati et al., 2022).

Sumarsono et al. (2024) emphasized that integrating digital technology into art learning increases student engagement and strengthens their sense of pride in their creative identity. With interactive features such as menu navigation, embedded process videos, and a comment section, the virtual gallery transforms the learning experience from passive to participatory (Meinecke et al., 2022). Students view images and experience the journey of digital curation. Furthermore, the virtual gallery functions as

a permanent digital archive. Uploaded works will not deteriorate over time or suffer damage from dust, thus constituting a digital portfolio that students can advance with to subsequent educational levels.

The application of technology in art classes also addresses the challenge of diverse learning styles (Abdellatif & ElKhodary, 2020). Digital materials provide flexibility for students with special needs or those with a predominantly visual-spatial learning style. At Middle School 5 Pallangga, the use of a virtual gallery allows students to explore local arts and culture in greater depth without being limited by school hours. Interactions between students and teachers, as well as between students (peer appreciation), become more dynamic and collaborative. This creates a healthy learning ecosystem where feedback comes not only from teachers but also from the broader learning community.

This research occupies a strategic position and introduces substantial novelty to the literature on art education in Indonesia. Most previous research on virtual galleries or digital museums has been conducted at the university level (art students) or in professional artist communities (García Cano et al., 2025; Rodriguez-Boerwinkle & Silvia, 2024; Tam & Hui, 2024). This research focuses on junior high school students, who are in the early adolescent development phase—a crucial period where social recognition significantly influences their creative confidence. This research views virtual galleries not only as a temporary exhibition tool to replace physical exhibitions but also as a long-term archiving system for works. This novelty lies in the integration of the Digital Portfolio concept into the arts and culture curriculum, where each student's progress is documented chronologically on the Google Sites platform. The uniqueness of this research lies in the researcher's role as an insider (the arts and culture teacher at the research site). This allows for in-depth participant observation that cannot be conducted by an outside researcher. The reflective perspective of a practitioner who faces daily challenges in the classroom provides greater validity for data regarding technology implementation in rural schools or schools with limited facilities. Furthermore, amidst the rise of expensive Virtual Reality (VR) or Augmented Reality (AR)-based exhibition technologies that require high-spec hardware (Murala & Panda, 2023), this research offers the novelty of using Google Sites, an open-source and lightweight platform. This serves as a model of innovation that can be replicated by other schools in Indonesia with limited budgets but wishing to digitize their education.

Through a quasi-experimental approach combined with quantitative descriptive methods, this study seeks to address the pedagogical challenges at SMP Negeri 5 Pallangga. Systematically, this study was designed to (1) determine the extent to which the use of a Google Sites-based virtual gallery can significantly improve students' arts and culture appreciation skills compared to conventional methods. (2) Explore in-depth students' perceptions and psychological responses to the transition from physical to digital exhibition spaces. (3) Identify technical strengths and structural barriers in the implementation of virtual galleries in order to provide recommendations for the development of more adaptive arts and culture learning media in the future.

Thus, this article is expected to make a tangible contribution to the development of art education technology theory and serve as a practical guide for educators in facing the era of digital disruption in the classroom.

2. METHOD

This research employed a quantitative approach with a pre-experimental design. The chosen design was a one-group pretest-posttest design, or comparative design, aimed at measuring the effectiveness of using a Google Sites-based virtual gallery on students' levels of art appreciation. Furthermore, this research utilized quantitative descriptive analysis to systematically describe student responses based on numerical data obtained in the field. The research was conducted at Middle School 5 Pallangga, Gowa Regency, South Sulawesi. This location was selected based on accessibility considerations and the researcher's role as a practicing teacher at the school (teacher-researcher). The research subjects were selected using a purposive sampling technique: eighth-grade students studying arts and culture. The researcher selected one experimental class to implement the intervention, using a virtual gallery as the primary publication medium for their work.

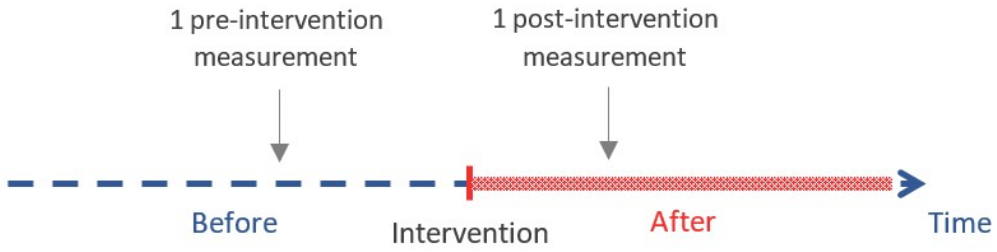

Figure 1. One-Group Pretest-Posttest Design

The research process was divided into three main stages carried out by the researcher in her capacity as educator and observer:

- Preparation Stage: Includes identification of curriculum materials, creation of a gallery account on Google Sites, design of the gallery layout, and validation of the research instrument by subject and media experts.
- Implementation Stage (Intervention): Students were directed to document their artwork (photos/videos), create descriptions of the artwork (self-curation), and upload them to a virtual gallery. Here, researchers conducted participant observation to watch the dynamics of student interactions with the platform.
- Evaluation Stage: Students participated in activities to appreciate the work of their peers through the comments feature and completed evaluation sheets provided digitally within the gallery.

Data were collected using validated instruments, including (1) the Art Appreciation Test: used to measure students' cognitive and affective abilities in assessing artwork (before and after using the gallery). (2) Student Response Questionnaire (Likert Scale): To measure students' perceptions of usability, visual appeal, and the effectiveness of the virtual gallery as a means of appreciation. (3) Observation Sheet: Used by researchers

to record student behavior during the digital exhibition process, including their involvement in providing feedback to fellow students.

The collected data was analyzed using two main techniques: (1) Descriptive Statistics: Used to process student response questionnaire data by calculating percentages, averages, and frequency distributions. This data is presented in the form of tables or diagrams to provide an objective picture of student perceptions. (2) Hypothesis Testing (T-Test): If using a pre-test and post-test comparison, a difference test (t-test) is conducted to see whether there is a significant increase in students' art appreciation scores before and after using the virtual gallery. (3) Reflective Analysis: Since the researcher acts as a practitioner, quantitative data is supported by reflective notes from observations to explain "why" and "how" the technology affects the learning atmosphere.

To ensure data validity, the research instrument was first tested for validity through expert judgment. The questionnaire's reliability was calculated using Cronbach's Alpha formula to ensure consistency across time periods.

3. RESULTS AND DISCUSSION

Results

Analysis of the Impact of Virtual Gallery Implementation on Art Appreciation

Building upon a quasi-experiment conducted at Middle School 5 Pallangga, the effectiveness of a Google Sites-based virtual gallery was measured through the integration of appreciation test data (pretest and posttest), classroom activity observations, and student response questionnaires. The research findings indicated a significant transformation in students' appreciative behavior, which can be described as follows:

Initial Condition (Pretest)

Pretest results indicated that students' art appreciation levels before the intervention were in the moderate category. Qualitatively, several obstacles were identified in the conventional appreciation process, including: Low student participation in responding to peers' work, Limited understanding of aesthetic elements and the philosophical meaning behind artworks, Lack of optimal appreciation due to limited exposure to all student work, and the ephemeral (temporary) nature of the appreciation process, dominated by brief oral assessments without systematic documentation.

Impact of the Intervention and Final Condition (Posttest)

After implementing the Google Sites-based virtual gallery, posttest results showed a substantial increase in appreciation quality. Visually and functionally, this platform successfully transformed the classroom art learning ecosystem into a more appreciative one. Students demonstrated deeper engagement through detailed observation of works, providing constructive written criticism in the comments section, and developing a sense of pride and appreciation for the diversity of their peers' work.

Quantitatively, there was a significant increase in average scores from pretest to posttest. Statistical data from a Paired Sample T-Test confirmed that the probability value obtained was below the significance threshold ($p < 0.05$). This empirically demonstrates that the difference in art appreciation levels before and after the intervention was not a coincidence, but rather a direct impact of the virtual gallery implementation.

The virtual gallery's success in enhancing art and culture appreciation is driven by the platform's ubiquitous nature (accessible anytime and anywhere). Unlike physical exhibitions that are bound by space and time, the Google Sites-based gallery provides students with the freedom to explore works beyond the confines of school hours. Furthermore, this virtual gallery creates a democratic exhibition space. By displaying all student work equally, each student receives equal recognition. This stimulated increased intrinsic motivation and critical understanding of students' understanding of the formal structure and content of artworks. Thus, this platform proved effective as a learning tool that increased participation, conceptual understanding, and appreciative attitudes among students at junior high school 5 Pallangga.

Normality test

A normality test was conducted to determine whether the pretest and posttest data were normally distributed. This study used the Shapiro-Wilk method with SPSS version 25, as the sample size was 30 respondents.

Table 1. Normal Tests

Variabel	Kolmogorov-Smirnov^a (Statistic)	df	Sig.	Shapiro-Wilk (Statistic)	df	Sig.
Pretest	101	30	.200*	939	30	87
Possttes	120	30	.200*	947	30	140

The results of the analysis in the Tests of Normality table above, here is the interpretation using the Shapiro-Wilk test (considering the number of samples N = 30). Pretest Significance Value: The value obtained is 0.087. Because 0.087 > 0.05, the pretest data is declared to be normally distributed. Posttest Significance Value: The value obtained is 0.140. Because 0.140 > 0.05, the posttest data is declared to be normally distributed. Because both variables have a significance value greater than 0.05, it can be concluded that the pretest and posttest data are normally distributed. Thus, the requirements for conducting parametric statistical tests in the form of Paired Sample T-Test have been met.

Paired Sample T-Test

A paired sample t-test was used to determine whether there was a significant difference between pretest and posttest scores after treatment using Google Sites-based virtual gallery media.

Table 2. Paired Samples Statistics

		Mean	N	Std. Deviation	Std. Error Mean
Pair 1	Pretest	55.60	30	5.975	1.091
	Possttes	59.27	30	5.356	.978

The average score increased by 3.67 points, from 55.60 in the pretest to 59.27 in the posttest. This indicates a positive impact of the learning intervention. The standard deviation value for the posttest (5.356) was smaller than for the pretest (5.975). This indicates that the distribution of student scores after using the virtual gallery became more homogeneous or even compared to before. Descriptively, the use of the Google Sites-based virtual gallery proved effective in stimulating student understanding in the Arts and Culture subject. The more interactive visualization of the material on the platform helped students absorb the material better than conventional methods.

Based on the results of the Paired Samples Statistics score, it can be concluded that the implementation of the Google Sites-based virtual gallery learning media had a significant positive impact on improving student learning outcomes. This improvement demonstrates that the integration of digital technology in the Arts and Culture curriculum can create a more adaptive and effective learning environment for students.

Table 3. Paired Samples Correlations

	N		Correlation	Sig.
Pair 1	Pretest and Possttes	30	.153	.419

The results of the correlation test between the pretest and posttest showed a value of r = 0.153, indicating a weak to moderate relationship between students' pretest and posttest scores. With a significance of 0.419 < 0.05, which means there is a statistically insignificant relationship.

Table 4. *Paired Sample T-Tes*t

Variabel	Mean	Std. Deviation	Std. Error Mean	t	df	Sig. (2-tailed)
Pretest - Posttest	-3.667	7.387	1.349	-2.719	29	.011

The results of the Paired Sample T-Test in Table 4 show that the average difference (mean difference) between the pretest and posttest results is -3.667. The statistical analysis results show a t-count value of -2.719 with a significance value (Sig. 2-tailed) of 0.011. Because the significance value is smaller than the specified significance level (0.011 < 0.05), it can be concluded that there is a significant difference between the pretest and posttest scores. These results indicate that the use of a Google Sites-based virtual gallery has a real positive impact on improving student learning outcomes.

Furthermore, interviews with subject teachers explained that when appreciating student work, the most important thing is not simply saying the work is "good," but also expressing appreciation specifically about impressive aspects of the work. For example, through comments such as "the colors you chose create a warm atmosphere" or "the

flow of the drawing is neat and easy to follow." Teachers also emphasized the need to focus on student effort, not just the final product, because appreciating the process makes students feel more valued. Furthermore, a positive and sincere tone of praise is crucial to avoid sounding contrived. Teachers also believe that telling students how their work has an emotional impact on others—for example, whether it makes them happy, moved, or laugh—can increase their motivation. Appreciation can be delivered privately or publicly, depending on the student's personality, and ideally, it concludes with continued support, such as encouraging them to continue creating.

Teachers revealed that art appreciation activities in the classroom face various challenges. One is students' lack of understanding of how to provide appropriate appreciation, resulting in limited and unconstructive comments. Furthermore, differences in student abilities and interests make participation in appreciation uneven. Another challenge is the limited allocation of learning time, as appreciation activities require time to display individual works, provide space for discussion, and allow students to respond. Supporting facilities are also limited, for example, classrooms are not large enough to display works, there are no display boards, and there are limited projectors or speakers. Teachers also face difficulties in managing student behavior, as some students often become bored, spontaneous comments can be hurtful, and the classroom atmosphere can become noisy. Subjective art assessment and a lack of support from schools and parents also pose challenges to art appreciation activities.

Virtual galleries have significant potential for showcasing student work in a more engaging, organized, and sustainable manner. This medium allows for wider and unlimited access to artwork, allowing students, teachers, and parents to view it at any time. Virtual galleries can also increase student pride and motivation because publishing work in digital format provides a more professional and modern experience. Furthermore, virtual galleries support technology-based learning and save costs and time in organizing art exhibitions. Beyond serving as a display space, virtual galleries also serve as an interactive medium for appreciation and reflection, allowing students to provide comments or responses digitally. This medium is also inclusive, reaching all students, including those who are shy and lack confidence in performing in front of the class.

Student Responses

Student responses to the use of the Google Sites-based virtual gallery were obtained through a questionnaire administered after the learning process and implementation of the virtual gallery were completed. The questionnaire responses were structured based on four aspects: learning, content, media display, and technical/programming aspects. Based on the questionnaire analysis, student responses to the use of the Google Sites-based virtual gallery were generally positive. This indicates that students welcomed the use of the virtual gallery as a means of art and culture appreciation in Arts and Culture lessons. Regarding the learning aspect, most students stated that the use of the virtual gallery made art appreciation activities more interesting and enjoyable. Students felt more motivated to observe their peers' artwork and were more confident in providing

responses and comments. The virtual gallery also helped students understand artworks more objectively because they could observe them at their own pace.

Based on the content aspect, student responses indicated that the artworks displayed in the virtual gallery were deemed appropriate for the learning material. Supporting information such as the title of the artwork, techniques, and brief descriptions helped students understand the meaning and process of the artwork's creation. This facilitated more focused appreciation. Regarding the visual aspect, most students responded positively to the design and presentation of the virtual gallery. The attractive display, neat arrangement of works, and clear visualizations made students feel comfortable when accessing the virtual gallery. Good visualization also increased students' interest in viewing and observing artworks in greater depth. Meanwhile, regarding the technical or programming aspect, students stated that the Google Sites-based virtual gallery was relatively easy to access via mobile devices and computers. Although there were some technical challenges, such as limited internet connection at certain times, the virtual gallery generally worked well and did not hinder the learning process. Based on these student responses, it can be concluded that the use of the Google Sites-based virtual gallery received a positive response from students. The virtual gallery was deemed to increase students' interest, activeness, and comfort in participating in arts and culture appreciation activities.

Additionally, the questionnaire collected data from 30 respondents in grade IX B, consisting of 9 males and 21 females. There were 12 positive responses and 4 negative responses.

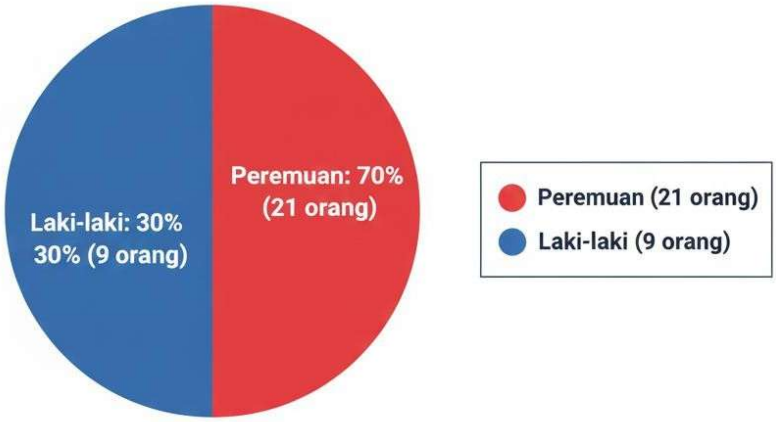

Figure 2. Student Response Questionnaire

Of the 30 respondents, the statements that answered SS (Strongly Agree), Agree (S), Undecided (R), Disagree (TS), and Strongly Disagree (STS) from 16 statements were: SS: 135, S: 219, R: 132, TS: 75, and STS, : 39 so that the number of statements with a Likert scale was 600. It can be concluded that the students' responses to the Google-based virtual gallery as a means of appreciation were positive, so that this experimental research was declared successful and could be used by the school, and could be an example for other schools that wanted to try this method in learning to appreciate arts and culture for students.

Discussion

The results of the study indicate that the implementation of a Google Sites-based virtual gallery has a significant positive impact on the level of art and cultural appreciation of ninth-grade students at Middle School 5 Pallangga. Based on the data analysis conducted, there are several important points that align these findings. The implementation of this media has succeeded in measurably increasing the average value of student appreciation. This is evidenced by the pretest score of 55.60, the posttest score of 59.27, and the paired sample t-test results, which showed a significance value of 0.011 ($p < 0.05$). These figures confirm that the use of a virtual gallery is not just a change in media trends but an intervention that has been statistically proven effective in increasing students' appreciation abilities compared to previous conventional methods. Positive student responses to the material, media display, and technical aspects, in addition to quantitative data, support the effectiveness of this media. The use of Google Sites as a virtual gallery provides two main advantages: Without the constraints of a physical classroom, students can view their work and that of their peers at any time. Continuous documentation of work provides a sense of pride and triggers deeper interaction with art objects.

Conceptually, this improvement indicates that the virtual gallery functions as a learning medium that expands the space and time for art appreciation. Students are no longer limited to briefly observing works in class, but instead have the opportunity to observe, examine, and reflect on artworks repeatedly and independently. This supports a more in-depth art appreciation process, as art appreciation itself requires the active observation, understanding, assessment, and appreciation of works of art (Chiu et al., 2024; Hwang et al., 2023). The use of a virtual gallery also shifts the paradigm of art appreciation learning from a passive one to an active and participatory one (Parsons, 2023). Students are not merely recipients of information, but are directly involved in providing responses, comments, and reflections on artworks. Thus, the virtual gallery serves as a stimulus that strengthens the aesthetic experience while increasing students' cognitive and affective engagement in arts and culture learning.

Theoretically, the results of this study align with the constructivist perspective, which asserts that the learning process will be meaningful if students are actively involved in learning activities, enabling them to construct their own understanding through direct experience (Zajda, 2021). Therefore, the treatment provided not only provides learning stimuli but also creates a conducive learning environment for developing students' thinking skills and abilities. Furthermore, student responses to the use of the Google Sites-based virtual gallery showed a positive trend. This is reflected in the predominance of "Strongly Agree" and "Agree" responses in the questionnaire responses, which covered aspects of learning, content, media display, and technical aspects. These positive responses indicate that the virtual gallery is not only effective in terms of learning outcomes but also psychologically and practically accepted by students.

From a learning perspective, the virtual gallery is perceived as being able to increase student motivation and interest in art appreciation activities. Observing and responding to artworks becomes more engaging and enjoyable, encouraging active student

engagement. This aligns with 21st-century learning principles that emphasize the use of digital technology to create meaningful and life-relevant learning experiences (Engeness, 2021; González-Pérez & Ramírez-Montoya, 2022). Meanwhile, in terms of appearance and technical aspects, the virtual gallery is considered to have clear visualizations and is easily accessible. Despite technical challenges such as limited internet connection, these constraints do not diminish students' overall positive perception of the virtual gallery as a learning medium.

Google Sites-based virtual galleries are easy to use, flexible, and encourage continuing art appreciation learning (Halim & Abd Halim, 2024). This platform displays and documents pupils' artwork fairly, providing them equal recognition. The virtual gallery can boost pupils' self-esteem and work pride. Digital publishing creates a more modern exhibition experience, which motivates students to develop and appreciate others' work. The virtual gallery also promotes digital literacy and collaboration. Students learn about art and use technology to communicate. Virtual galleries help meet cognitive, emotive, and psychomotor arts and culture learning goals (Papasarantou et al., 2023).

Google Sites-based virtual galleries are effective but have drawbacks. Internet dependence is a serious issue in schools with poor technology. To maximize assessment and feedback, teachers must use Google Sites with other media because of its restricted interactive capabilities and design. These constraints suggest that virtual galleries cannot totally replace in-person art exhibitions, especially in terms of social connection and emotion. Virtual galleries are still useful as an alternative and supplement to traditional art appreciation approaches, especially in technology-based learning. This study interviewed teachers to understand art appreciation and the possibilities for virtual galleries in classrooms, as well as quantitative data showing enhanced learning results. The interviews shed light on arts and culture learning in the classroom.

To appreciate student work, professors advised against using general terms like "good" but rather more particular and relevant ones. Teachers stressed that noting a work's color choice, compositional flow, or nuances might boost pupils' confidence. To make pupils feel appreciated for their hard work, recognition should stress effort and process, not just outcome. A positive, sincere, and suitable tone of appreciation (both personally and publicly, depending on the student's character) is also important for cultivating appreciation. Teachers also stressed that praise should lead to future support, such as encouraging students to create new works.

Art appreciation offers many benefits, but teachers found various problems in the classroom. They found that several pupils didn't know how to express gratitude and gave quick responses. Different interests and abilities drove some pupils to speak more than others, while others chose silence. Since appreciation exercises demand time to analyze and debate particular works, learning time was another issue. Display boards, classroom space, and projection mediums were typically scarce, hindering work presentation. Teachers struggled to manage student behavior, including spontaneous comments that could injure others and a boisterous classroom during appreciation periods. Teachers also said art judgments were subjective since blending technical and creative elements

was difficult. Environmental support, such as parental neglect of art appreciation or the belief that art is not a main subject, is another issue.

Despite these obstacles, teachers believe virtual galleries might help schools promote art appreciation. Teachers believe that virtual galleries, accessible at any time, can provide a wider and more flexible view of student work. Digital displays are crisper, more structured, and more engaging, which boosts students' pride, motivation, and enthusiasm in generating and appreciating peer work. Through digital comments and reactions, virtual galleries make appreciation more participatory. Shy kids can engage without the unpleasantness of performing in class. This potential makes virtual galleries inclusive for energetic and insecure pupils (Cotter et al., 2024).

The teacher also wanted to use virtual galleries in arts and culture classes sustainably. The teacher says this medium streamlines documentation and class exhibitions and increases student work viewing. The teacher thinks digital publishing makes kids proud and motivates them to produce.

4. CONCLUSION

The implementation of a Google Sites-based virtual gallery has made a positive and significant contribution to improving students' appreciation of art and culture. Empirical findings indicate an increase in the average appreciation score from 55.60 in the pretest to 59.27 in the posttest. The results of the paired sample t-test strengthen this finding with a significance value of 0.011 ($p < 0.05$), confirming that the use of this media effectively improves the quality of student learning outcomes. Qualitatively, the use of this virtual gallery has succeeded in transforming the appreciation process into a more interactive and inclusive one. Student responses are in the positive category, both in terms of learning materials, media display, and technical use. The main advantages of this platform lie in easy access that is not limited by space and time, increased student learning motivation, and the ability to continuously document digital works. Despite technical challenges such as dependence on a stable internet connection and limited interactive features, overall, the Google Sites-based virtual gallery is an innovative solution worthy of recommendation as an art learning medium at the junior high school level to address the challenges of the digital era.

As a recommendation, it is hoped that arts and culture teachers can adopt similar digital platforms not only as exhibition spaces but also as integrated digital portfolios to monitor students' creative development longitudinally. To fully utilize the platform's customization features, educators must consistently enhance their digital literacy. Schools are advised to support the provision of adequate internet infrastructure and digital devices to ensure inclusive access to this technology for all students, as well as facilitate technology training for educators. Since this study used a type of research design that wasn't fully experimental and had a narrow focus, future researchers should consider doing studies that compare different groups with a larger number of participants or create more advanced ways for students to interact, which would improve how they communicate visually in online environments.

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