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Enhancing Knowledge of Traditional Chinese Art and Culture among Primary Students Using the Seewo Easinote5 Application: A Case Study of Guangzhou Experimental Primary School

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Abstract

This study aims to explore the impact of the Seewo Easinote5 application on improving primary school students' knowledge of traditional Chinese art and culture. The study aimed to achieve three objectives: (1) To measure the effectiveness of Seewo Easinote5 application in improving students' comprehension and recall of traditional Chinese art; (2) To evaluate the differences in students' knowledge and understanding of traditional Chinese art and culture before and after the implementation of Seewo Easinote5 application; and (3) To explore students' perspectives on the use of Seewo Easinote5 application in enhancing their knowledge and understanding of traditional Chinese art and culture.

The study was conducted at Guangdong Huizhou Guangzheng Experimental Primary School, and the subjects included 450 fifth-grade students in 10 classrooms. To ensure representativeness, a cluster random sample was used, and 45 students from one class (five fifth-grade classes) were selected as the research sample. A pre-test and post-test experimental design was used, and quantitative analysis methods were employed. The research tools included lesson plans, questionnaires, tests and opinion surveys. The data were analysed using the mean scores ($\bar{x}$), standard deviation (S.D.) and t-value.

The outcomes revealed that utilizing the Seewo Easinote5 application positively influenced students' understanding of Chinese artistic heritage. Participants in the trial group exhibited high levels of agreement regarding the tool's educational value. Assessment results displayed substantial academic progress, particularly in long-term information retention. Learner feedback indicated overwhelmingly positive experiences with the digital platform, reflecting strong engagement and satisfaction. Statistical validation through p-values confirmed the meaningfulness of these observed improvements across all measured parameters.

Keywords: Seewo Easinote5 Application, Promoting Knowledge, Traditional Chinese Art

Introduction

With the development of the times, the integration of digital tools in education has become a significant trend. Due to limited curriculum focus and outdated teaching methods, primary school students often lack an understanding of traditional Chinese art and cultural education. Therefore, this study takes Guangzheng Experimental Primary School as an example and uses the popular digital tool Seewo Easinote5 application as an innovative tool to enhance students' understanding of traditional Chinese art and culture.

Firstly, traditional Chinese art and culture play a crucial role in art education, but their presence in primary education is still limited due to various reasons. Factors such as insufficient emphasis on the curriculum, inadequate teaching resources, and lack of engaging teaching methods have led to this knowledge gap. Although art education is essential in cultivating creativity and cultural identity, compared to subjects such as Chinese and mathematics that require scores, schools, parents, and students do not attach enough importance to art courses.

Secondly, there is a lack of teaching resources, which leads to traditional teaching methods mainly relying on textbooks and blackboards, and rigid teaching methods make it challenging to convey the dynamic and interactive nature of art education. Therefore, students may find it difficult to understand the rich history, symbolic meanings, and artistic techniques contained in Chinese art forms, leading to a decrease in interest and participation during class.

However, the development of digital technology has provided new possibilities for improving art education. Digital tools, especially the Seewo Easeote5 application, enable educators to present complex artistic concepts through multimedia, interactive features, and real-time feedback. These tools bridge the gap between traditional content and contemporary educational practices, promoting a deeper understanding of cultural heritage. The Seewo Easeote5 application supports the digitisation of conventional art content and attempts to integrate interactive instructional design and practical activities, creating a more attractive and holistic learning experience.

Returning to the trend of globalization, we will find that protecting and promoting traditional Chinese art and culture is crucial and conducive to the globalization of conventional culture. Therefore, as a starting point for globalizing traditional Chinese art knowledge, introducing digital tools into art education can help primary school students lay a solid foundation in art and make it easier to understand relatively complex art and cultural knowledge. The interactive features of the Seewo Easenote5 application provide an immersive learning platform for students to participate in traditional Chinese art in a way that enhances their understanding and cultivates a stronger sense of cultural pride.

This study aims to fill this gap by evaluating the effectiveness of the Seewo Easeote5 application in achieving this goal. These findings will not only contribute to academic discussions on digital learning but also provide practical insights for educators who wish to integrate modern technology into cultural education. This study aims to modernize and globalize art education, bridge cultural knowledge gaps, and utilize digital tools to protect and promote traditional Chinese art and culture among young learners.

Research Questions

The main research questions guiding this study are:

- How does the Seewo Easinote5 application enhance students' understanding and retention of traditional Chinese art and culture?
- To what extent does the Seewo Easinote5 application promote knowledge of traditional Chinese art and culture?
- What are the students' perspectives on the use of the Seewo Easinote5 application in promoting knowledge of traditional Chinese art and culture?

Literature Review

This section examines academic works related to e-learning systems, participatory instruction methods, and technological influences on traditional art pedagogy in China, particularly analyzing applications like the Seewo Easinote5 application.

Modern educational technology can use digital tools to enrich teaching practices, and research has shown that the integration of multiple technologies can enhance learners' interest and participation in the arts. As [Langdon \(2014\)](#) observed, e-learning systems can expand the availability of resources and update students' ways of connecting with art content. It has been proven that this shift in communication methods has, to some extent, affected the teaching of art. Digitizing art content in teaching can better disseminate knowledge of traditional Chinese art.

A clear example is that the Seewo Easinote5 application can modernize traditional art courses through multimedia integration, practical learning tools, and web-based material accessibility. The interface of this software enhances learner

engagement by providing multi-sensory educational interaction. Langdon's research suggests that these platforms allow students to watch virtual reproductions of classic artworks and practice digital painting methods online, thereby better understanding the principles of artistic creation.

Modern teaching research places special emphasis on the interaction and communication between teachers and students. For example, intelligent teaching software like Seewo Easeote5 can achieve real-time Q&A and group collaboration functions, which allows children to understand Chinese art more thoroughly. [Rahayu and Makmur's \(2024\)](#) recent research also proves that interactive white boards such as Smart Boards used in classrooms can indeed make art classes more interesting. In the past, the one-sided teaching style of teachers could easily distract students in art classes. Still, with these technological tools, every student can participate and enhance their interest in learning. Even better, these digital platforms allow students to discuss their works online, just like forming study groups to inspire each other. [Rahayu and Makmur \(2024\)](#) also found that the real-time scoring system that comes with interactive tools is beneficial. Students can receive prompts immediately for any unclear points, which can improve their understanding and memory abilities. At the same time, it can promote a collaborative learning environment, allowing students to communicate their ideas in a timely manner.

Regarding the use of technology to change art education, research has confirmed that digital tools significantly enhance students' learning experiences in art education. Marshall pointed out that using multimedia tools can improve students' understanding and appreciation of art, especially art related to cultural heritage. Later, [Collins and Halverson \(2009\)](#) added that the integration of digital tools has changed traditional learning environments by providing interactive and immersive experiences, turning previously dull art history into interactive games. Technologies such as virtual reality and augmented reality enable students to "travel" to ancient scenes, experience the feeling of making porcelain or replicating ancient paintings, and provide a more profound and engaging way to learn

traditional Chinese art. In addition, digitization makes it easier for people to access different forms of art, making cultural heritage more widely accepted by the public.

Recent studies have also shown that these technological tools can particularly stimulate students' enthusiasm for learning in the classroom. [Smith et al. \(2005\)](#) believes that interactive learning software like the Seewo Easeote5 application is more effective than traditional models in stimulating children's imagination. The digital learning environment not only facilitates the acquisition of knowledge but also promotes the development of artistic skills through interactive participation. For example, organizing art competitions through software is more interesting than simply listening to teachers' explanations and can increase students' enthusiasm for learning.

Research shows blending traditional culture with modern art education matters greatly. Experts argue that schools should offer more specialized training for students pursuing cultural careers ([Wei, 2014](#)). Others, such as [Shao & Ding \(2015\)](#), have worked to preserve traditional arts, such as Kunqu opera, by creating central digital resource banks. New tech like VR helps young learners connect with cultural heritage through immersive experiences ([Chu, 2021](#)).

Many studies explore mixing traditional art elements with modern teaching. [Fu \(2017\)](#) examined how colours in folk art create visual appeal, helping us appreciate traditional styles. [Liu and Li \(2020\)](#) tested putting cultural elements into modern design classes to develop fresh teaching approaches.

Modern tech like AI and AR is transforming art education. AI painting tools let teachers create customized materials for different learners, replacing old textbooks with interactive tools that adapt to each student's needs. AR/VR brings art to life - letting students "enter" virtual galleries, animate historical artefacts, or practice music through motion tracking. These technologies make learning more hands-on and exciting.

Digital methods are breathing new life into traditional art. Blending digital tools with classic techniques helps artists modernize their work while keeping cultural roots. Collaborations between

conventional and digital artists combine handcrafted details with 3D effects and animation. VR simulations even let students “step into” classic painting scenes to understand traditional techniques better. These innovations help keep cultural heritage relevant for new generations.

Looking ahead, research shows that the combination of digitalization and art education is a collision of modernity and tradition, providing students with the necessary digital skills. Liu discussed how computer-aided design (CAD), 3D printing, and VR have become fundamental tools in this field, and this transformation requires students to engage in interdisciplinary learning in order to innovate in the rapidly developing era. As Miao stated, with constantly evolving technology redefining the possibilities of art, continuous learning and adaptability are crucial for students to succeed in digital art education. In order to achieve maximum success, students must become versatile talents who can inherit cultural genes and master digital tools.

The Seewo Easinote5 has become an essential tool in the classroom, helping students engage with their learning like never before. One of its key features is the interactive touchscreen, which allows teachers to present lessons in a way that grabs students’ attention. For example, when studying science, instead of just reading from a textbook, students can explore 3D models of planets or human anatomy right on the screen. This hands-on approach not only makes the subject more exciting but also helps solidify understanding because students can see and interact with what they are learning.

Additionally, comparing the Seewo Easinote5 to traditional methods shows just how much it enhances education. In the past, students relied heavily on paper and pen for note-taking, often leading to distractions or loss of focus during lectures. With the Easinote5, students can organize notes digitally, add images, and even record audio explanations—all in one place. It not only keeps them focused but also creates a personalized study experience that caters to different learning styles. As we look at these real-life examples of improvement in learning, it becomes clear that tools like the Seewo Easinote5 aren’t just gadgets; they’re transforming the way students connect with knowledge and prepare for the future ([Rahayu and Makmur, 2024](#)).

Table 1 Comparison of the Seewo Easinote5 to Traditional Methods

Feature	Seewo Easinote5 Application	Other Digital Tools (e.g., Smart Boards)	Traditional Textbooks
Interactivity	High (real-time quizzes, gamification)	Moderate	Low
Multimedia Integration	Advanced (animations, videos)	Limited	None
Engagement	Strong	Moderate	Weak
Knowledge Retention	High	Moderate	Low

The Seewo Easinote5, various digital tools (such as smart boards), and conventional textbooks are contrasted in Table 1. Seewo Easinote5 is excellent in terms of engagement (strong), multimedia integration (advanced with animations and movies), interaction (high with real-time quizzes and gamification), and information retention (high). Other digital tools, on the other hand, exhibit modest engagement and information retention, limited multimedia integration, and moderate interaction. Conventional textbooks offer poor engagement and low knowledge retention, are the least interactive, and don’t include multimedia. All things considered, Seewo Easinote5 has far more elements for interactive learning and student involvement than both conventional textbooks and other digital resources.

Methodology

Research Planning

In order to ensure an in-depth and robust analysis, this study adopts a pre-test and post-test experimental design. More specifically, this study will be conducted at Guang zheng Experimental Primary School, with 450 fifth-grade students participating in 10 classrooms. A cluster random sampling method was used to select classroom no.5 to ensure representativeness. The investigation process includes three main stages:

Pre-testing: Before using the Seewo Easinote5 application for teaching, students need to complete a structured knowledge assessment that includes

30 multiple-choice questions. These questions emphasize their previous understanding of traditional Chinese art and culture.

Teaching Phase: Within 10 weeks, students will receive a course on Seewo Easinote5 application design. Each class lasts for 80 minutes and follows a structured teaching plan that integrates digital tools such as cloud courses, interactive multimedia, and real-time quizzes.

Post-test and Learning: After the learning period, students will undergo the same knowledge assessment as the pre-test again. In addition, a Likert scale questionnaire (24 points) was used to measure their understanding of the learning experience, which assessed their participation, knowledge, and overall satisfaction with the project.

Data Analysis: Descriptive statistics should be used to analyze data, including mean ($\bar{x}$) and standard deviation (S.D.), to summarize the knowledge gap before and after testing. In addition, inferential statistics, especially t-tests for minority samples, will be used to determine the importance of improving knowledge. Compare the t-values obtained from the study (19.08) with the critical threshold (2.02) to determine statistical significance. Maintain a 95% confidence level ($p < 0.05$) throughout the entire analysis process to ensure the reliability of the study.

Population and Samples

This study aims to assess the impact of the Seewo Easinote5 application on students' understanding and knowledge of traditional Chinese art and culture. The subjects of this study are fifth-grade students in 2024 at Guangzheng Experimental Primary School, with a total of 450 students across 10 classrooms, each consisting of 45 students. The students range in age from 10 to 11 years old, primarily from the Huizhou area, and have diverse cultural backgrounds and academic levels. This study examines this population in depth to gain comprehensive insights that support the research questions.

Given the total population of 450 students, a sample size of 45 students was chosen to balance statistical power and practicality. To ensure diversity and representativeness, cluster random sampling was applied. One class was randomly selected from the ten fifth-grade classes, and students within

the selected class were randomly assigned cluster random sampling numbers using a computer-generated selection process to ensure unbiased distribution. A pre-test and post-test experimental design was used to evaluate students' knowledge retention before and after the implementation of Seewo Easinote5 application-based instruction. The final selected class was Grade 5 Class 5.

Procedures

This study systematically tested the effectiveness of the Seewo Easinote5 application in traditional culture teaching through three key steps: course design, learning effectiveness testing, and student feedback collection.

Firstly, a ten-week teaching plan was designed, consisting of five stages of courses, each lasting 80 minutes. All classes utilize the online courseware feature of Seewo software, combined with video presentations, in-class quizzes, and group discussions. Classroom activities are mainly divided into three categories: using digital courseware to explain knowledge points, learning art classification through drag-and-drop interactive games, and completing creative tasks through group cooperation to help students understand traditional art from multiple perspectives.

Secondly, in order to assess students' mastery of knowledge, two special exams were set up before and after. The test paper contains 30 multiple-choice questions, covering topics such as traditional art knowledge, identification of distinctive skills, and recognition of works by famous artists throughout history. Before the formal testing, a small-scale trial was conducted to ensure that the questions were accurate and reasonable. Finally, the average score, fluctuation of grades, and other data were compared, and professional statistical methods were used to verify whether the progress was significant.

We also conducted a questionnaire survey using the Likert scale to collect students' usage experience. The questionnaire contains 24 attitude questions covering three dimensions: learning interest, operational expertise, and knowledge understanding. Set five options from "strongly agree" to "strongly disagree" for each question, and finally calculate the results according to the standard scoring rules.

The entire research process adopts standardized procedures and cross-validation through multidimensional data to ensure that the evaluation of software teaching effectiveness is both objective and credible.

The Research Tools and Quality of Tools

To ensure the reliability and validity of the research instruments, the researchers employed a structured evaluation process. The lesson plan, test, and student questionnaire were reviewed and validated by educational research experts. The lesson plan was assessed using a validity evaluation form, with experts rating the alignment of content with learning objectives. The Item Objective Consistency (IOC) Index for the five lesson plans was found to be 0.75, confirming strong content validity.

Similarly, the test consisting of 30 multiple-choice questions was developed and refined through a multi-step validation process. The IOC analysis for the test also yielded a score of 0.81, indicating strong alignment with the research objectives. The student questionnaire, designed to evaluate perspectives on the Seewo Easinode5 application, followed a standardized Likert scale. Expert validation ensured content reliability, with the questionnaire achieving a Cronbach's alpha reliability score of 0.87, confirming high internal consistency.

Data Analysis

Data Processing and Validation

Before statistical analysis, data cleaning and verification were conducted to ensure accuracy. Included 1) Identifying and handling missing data; 2) Performing normality tests and homogeneity of variance checks.

Statistical Methods

The following analyses were performed using EXCEL:

Descriptive Statistics - Calculated mean, median, and standard deviation of pre-/post-test scores to show overall performance

Paired t-test - Compared test score differences to verify significant knowledge improvement

Regression Analysis - Examined quantitative relationship between software usage time and score improvement

Likert Scale Analysis - Categorized student feedback into five levels (e.g., "Strongly Agree"=4.01-5.00 points)

These combined methods systematically evaluated the Seewo Easinode5 application's effectiveness in traditional culture education, confirming the research hypotheses.

Results

The analysis reveals a statistically significant improvement in students' knowledge of traditional Chinese art and culture following the implementation of the Seewo Easinode5 application. The pre-test mean score of the selected students was 40.15 (S.D.=12.25), which increased to 88.29 (S.D.=13.70) in the post-test, reflecting a significant improvement of 48.15 points.

The paired-sample t-test result ($t=19.08$, $p<0.01$) confirms that the observed improvement was statistically significant. It aligns with the findings of [Collins and Halverson \(2009\)](#), who demonstrated that integrating digital learning tools into education enhances student engagement and knowledge retention.

Survey results further indicate that students responded positively to the digital learning experience. The overall satisfaction score was $\bar{x} = 4.36$ (S.D.=0.63), categorized as "Very Satisfied." Students particularly appreciated the multimedia elements (85%) and interactive features (78%), which helped them visualize abstract artistic concepts and enhance their understanding of traditional Chinese art.

These findings highlight the effectiveness of Seewo Easinode5 in bridging the gap between traditional Chinese art education and contemporary digital learning methodologies. However, some students initially faced challenges in navigating the application interface, suggesting that future implementations should include structured orientation sessions. Further research should investigate the long-term retention effects of digital learning tools on cultural education.

This chapter compares the pre-test and post-test scores of five primary students in the experimental group, analyzing data through descriptive analysis, EXCEL, and t-value calculations. The study

evaluates how the Seewo Easinote5 application enhances students' understanding and retention of traditional Chinese art and culture, measuring the extent of its effectiveness and gathering students' perspectives on its role in cultural education.

The Seewo Easinote5 application integrates multimedia technology to enrich art instruction, making learning more engaging and interactive. This tool supports teachers in course preparation while enabling students to grasp cultural knowledge enjoyably. The questionnaire results indicate a notable improvement in students' mastery of traditional Chinese art and culture, aligning with previous research on digital learning's positive impact on engagement and knowledge retention.

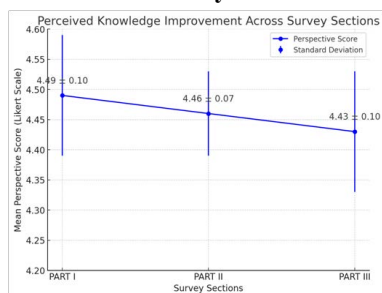
The experimental results show enhanced student understanding in three key areas:

- General knowledge of traditional Chinese art and culture
- Knowledge of Chinese non-heritage art and culture
- Famous painters and masterpieces of different dynasties

Additionally, teachers observed increased student motivation and classroom engagement after integrating the Seewo Easinote5 application into art instruction, further supporting its effectiveness in cultural education.

Part 1 to answer the research question:1 How does the Seewo Easinote5 application enhance students' understanding and retention of traditional Chinese art and culture?

Table 2 Perceived Knowledge Improvement Across Survey Sections



How does the Seewo Easinote5 application enhance students' understanding and retention of traditional Chinese art and culture?

The Seewo Easinote5 application can significantly assist in promoting knowledge of traditional Chinese arts and culture. The overall result for the experimental group was $\bar{x} = 4.47$, S.D. = 0.56. interpreted as 'Strongly Agree'.

Table 2 The Questionnaire show that:

- The Seewo Easinote5 application assisted me in grasping a better understanding of General knowledge of traditional Chinese art and culture: $\bar{x} = 4.49$, S.D. = 0.55. interpreted as 'Strongly Agree'.
- The Seewo Easinote5 application assists me in better-grasping Knowledge of Chinese non-heritage art and culture: $\bar{x} = 4.46$, s.d. = 0.56. Interpreted as 'Strongly Agree'.
- The Seewo Easinote5 application assisted me in getting a better grasp of Famous painters and masterpieces of different dynasties: $\bar{x} = 4.43$, s.d. = 0.60. interpreted as 'Strongly Agree'.

By investigating the results obtained from the experimental group, it can be seen that the Seewo Easinote5 application significantly assists primary school students in having a better knowledge of traditional Chinese art and culture.

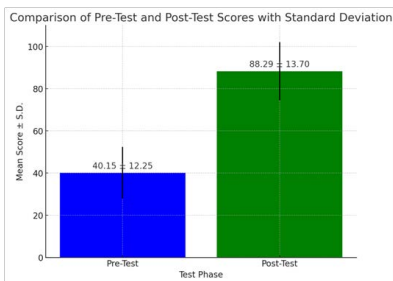
Part 2 to answer research question 2 To what extent does the Seewo Easinote5 application promote knowledge of traditional Chinese art and culture?

The test is based on the content of traditional Chinese art and culture and consists of 30 questions divided into three sections as follows:

- General knowledge of traditional Chinese art and culture (12 items)
- Popularizing knowledge of traditional Chinese arts and non-heritage culture (12 items)
- Popularizing famous painters and their masterpieces of different dynasties (6 items)

Compared to the Pre-Test scores, all scores on the Post-Test were significantly higher after teaching with the Seewo Easinote5 application as in Table 3.

Table 3 The Comparison of Pre-Test and Post-Test Scores with Standard Deviation



From Table 3, the total score results show that:

- **Mean Score ($\bar{x}$):** The mean post-test score (88.29) is considerably higher than the pre-test score (40.15), reflecting a substantial knowledge gain of 48.15 points.
- **Standard Deviation (S.D.):** The standard deviation increased from 12.25 to 13.70, indicating more significant variability in students' performance post-intervention.

Table 4 Paired Samples t-test Results

Statistical Indicators	Calculation Results
Sample Mean Differences ($\bar{x}_D$)	48.15
Sample Standard Deviation of Differences (sD)	16.93
Sample Size (n)	45.00
Degrees of Freedom (df)	44.00
t-Value (t)	19.08
Critical t-value ($t_{critical}$)	2.02
Significance Conclusion	Significant Differences ($t > t_{critical}$)

From Table 4: Paired samples t-test results show that: The paired samples t-test yielded a t-value of 19.08 ($df = 44$, $p < 0.001$), significantly exceeding the critical threshold ($critical = 2.02$). This result confirms a statistically significant improvement in students' knowledge post-intervention, demonstrating the effectiveness of the Seewo Easinote5 application in enhancing their understanding of traditional Chinese art and culture.

Table 5 Comparison of Pre-Test and Post-Test Mean Scores with Improvements

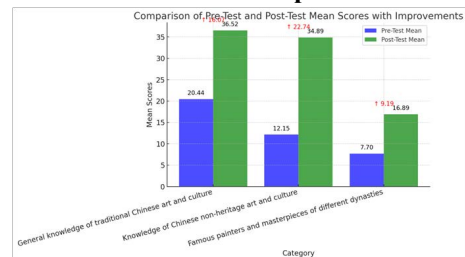


Table 5 showed that the Seewo Easinote5 application significantly enhanced students' knowledge across three key areas of traditional Chinese art and culture, as reflected in the Pre-Test and Post-Test score comparisons.

- **General knowledge of traditional Chinese art and culture** showed a 16.07-point improvement in mean scores, with a reduction in score variability (S.D. decreased from 8.00 to 5.90), suggesting more consistent learning outcomes.
- **Knowledge of Chinese non-heritage art and culture** experienced the most remarkable improvement of 22.74 points, though the increase in S.D. (from 5.82 to 8.43) indicates diverse levels of student progress.
- **Famous painters and masterpieces of different dynasties** saw a 9.19-point increase in mean scores, with a slight decrease in S.D. (from 4.19 to 4.05), reflecting greater consistency in student performance.

Overall, the results demonstrate that Seewo Easinote5 effectively improves students' understanding of traditional Chinese art and culture, with varying levels of knowledge retention and engagement across different content areas.

Part 3 to answer research question 3: What are the students' perspectives on the use of the Seewo Easinote5 application in promoting knowledge of traditional Chinese art and culture?

Table 6 Student Perspective Evaluation

Category	Mean Score ($\bar{x}$)	Standard Deviation (S.D.)
General knowledge of traditional Chinese art and culture	4.39	0.58

Knowledge of Chinese non-heritage art and culture	4.36	0.63
Famous painters and masterpieces of different dynasties	4.32	0.67
Overall Satisfaction	4.36	0.63

Table 6 Student Perspective Evaluation shows that:

The Likert-scale results indicate that students generally responded positively to the use of the Seewo Easinote5 application, with an overall mean score of $\bar{x} = 4.36$, S.D. = 0.63 interpreted as 'very satisfied'. This confirms that students found the tool effective and engaging, addressing Research Question 3.

The experimental data can explain the following interesting questions:

- Students were satisfied with the section on General knowledge of traditional Chinese art and culture: $\bar{x} = 4.39$, S.D. = 0.58. interpreted as 'Very satisfied'.
- Students are satisfied with the Knowledge of the Chinese non-heritage art and culture section: $\bar{x} = 4.36$, S.D. = 0.63. Interpreted as 'Very Satisfied'.
- Students were satisfied with the section on Famous painters and masterpieces of different dynasties: $\bar{x} = 4.32$, S.D. = 0.67. interpreted as 'Very Satisfied'.

By analysing the above data as well as the specific data from the three sections, it is clear that students have a high level of satisfaction with the learning experience brought about by using the Seewo Easinote5 application to teach knowledge of traditional Chinese art and culture.

Discussion

Part 1 to Answer Research Question no. 1

The Seewo Easinote5 application significantly enhances students' understanding and retention of traditional Chinese art and culture. According to the questionnaire results, the paired t-test results ($t=19.08$, $p<0.001$) confirm a statistically significant improvement in students' knowledge acquisition, demonstrating the application's positive impact.

Students exhibited higher scores in various areas, indicating a general grasp of traditional Chinese art

and culture through the application. Specific results included an average score of over 4.4 out of 5 in areas such as knowledge of non-heritage Chinese art and culture and understanding of famous painters and masterpieces from different eras. These results align with the research hypothesis. [Rahayu and Makmur \(2024\)](#) highlights that tools like smartboards "make classroom learning more creative and lively by boosting interaction," showing why apps like Seewo Easinote5 are so used in elementary schools.

Key Results from the Study

General Art Knowledge: High scores here mean the Seewo Easinote5 application helps students solidify their understanding of traditional Chinese art basics. [Rahayu and Makmur \(2024\)](#) adds that these tools "create teamwork-friendly classrooms where students discuss ideas and learn together," which is key for tricky topics like traditional art.

Intangible Culture: The Seewo Easinote5 application also boosts students' grasp of China's "unseen" cultural arts (like crafts or rituals), helping keep these traditions alive. Marshall found that using multimedia tools helps students value cultural artworks more deeply, making lessons richer.

Famous Artists & Masterpieces: Strong scores here show the app helps students learn Chinese art history better. [Collins and Halverson \(2009\)](#) say digital tools change how we learn by letting students "explore historical settings firsthand" through interactive, hands-on activities.

The comparison of Pre-Tests and Post-Tests illustrates the effectiveness of the Seewo Easinote5 application in mastering traditional Chinese art and culture, resonating with [Langdon \(2014\)](#), who noted that digital learning broadens resource access and redefines student-art interaction.

Overall, a comprehensive analysis of data supports the significant positive impact of the Seewo Easinote5 application on promoting elementary students' understanding of traditional Chinese art and culture. Future research should continue to explore these methods across various educational contexts to validate and expand upon these findings.

Part 2: Response to Research Question No. 2

The Seewo Easinote5 application promotes knowledge of traditional Chinese art and culture

to a significant extent. As indicated in Table 4-2, Post-Test scores reflect a considerable improvement compared to Pre-Test scores in three specific areas:

- General knowledge of traditional Chinese art and culture
- Knowledge of traditional Chinese arts and non-heritage culture
- Knowledge of famous painters and their masterpieces from different dynasties

The experimental group outperformed in the Post-Test, showing improvements across all areas. Levy's research highlights that the ability to re-display multimedia makes it an efficient source of information, providing diverse types and thus making ideas and concepts more 'tangible' for students. Therefore, the Seewo Easinote5 application significantly enhances primary school students' knowledge of traditional Chinese art and culture, as evidenced by higher scores in these areas.

Clear Improvement: The big jump in test scores (Pre-Test vs. Post-Test) shows this teaching tool works well. [Smith et al. \(2005\)](#) explain that interactive tech like this encourages discussion and helps students connect ideas, boosting both art knowledge and learning quality.

Key Results

Traditional Culture: Students' average scores jumped by over 48 points (from 40.15 to 88.29). This aligns with [Shao \(2018\)](#), who say central educational databases help protect traditional arts.

General Knowledge: Scores rose by 16.07 points, proving the app helps students grasp intangible cultural heritage. [Fong \(2001\)](#) praises tools like Seewo Easinote5 for blending modern tech with creative teaching.

Intangible Arts: A 22.74-point gain shows better mastery. [Shao \(2018\)](#) stress that keeping cultural traditions alive in schools preserves national identity.

Famous Artists/Works: Scores improved by 9.19 points. [Wei \(2014\)](#) highlights the need to weave cultural heritage into modern lessons.

Tech's Role: The researcher adds that digital tools add fresh ideas to traditional art, making it more engaging. This confirms the Seewo app's value in boosting students' cultural understanding and grades.

The study demonstrates that the Seewo Easinote5 application effectively enhanced students' knowledge of traditional Chinese art and culture. However, a more detailed exploration of how Seewo Easinote5 specifically contributed to this improvement is needed. For instance, which multimedia activities—such as animations or videos—were most beneficial for understanding abstract concepts? Furthermore, which interactive features (like real-time quizzes or gamified elements) were more successful in promoting participation and retaining information? According to the results from Table 3, there was a significant improvement in students' scores from the pre-test (40.15) to the post-test (88.29), reflecting a 48.15-point gain. It suggests that the interactive features and multimedia integration in the Seewo Easinote5 played a vital role in enhancing student comprehension ([Smith et al., 2005](#)). Providing concrete examples from the student's interactions with the app would offer more clarity on its role in the learning process ([Rahayu and Makmur, 2024](#)).

Part 3: Response to Research Question No. 3

Students expressed satisfaction with using the Seewo Easinote5 application to teach traditional Chinese art and culture. "The students in the experimental group were delighted with all aspects of the learning experience. They were delighted with the teaching experience provided by the Seewo Easinote5 application, emphasizing the importance of helping to understand various complex art concepts, and felt that after teaching art in the Seewo Easinote5 application, they had a good understanding and interest in traditional Chinese culture and art in general."

Additionally, students showed high satisfaction with "the part about the knowledge of Chinese non-heritage culture and art," indicating that the application provided a unique art teaching experience and enhanced their awareness of the protection and inheritance of China's intangible cultural heritage.

These findings align with [Rahayu and Makmur \(2024\)](#), who stated that "the use of interactive smart boards in innovative contextual learning in schools has received widespread attention. The advantages of this tool in the teaching process include more interesting presentation of materials, active

participation of students, deeper understanding of concepts through visualization, and collaborative completion of learning tasks.” [Langdon \(2014\)](#) also noted that “digital technology clearly affects artistic creation, experience, history, and concepts, making art more accessible and ‘familiar’ compared to traditional art forms.”

However, students reported relatively low satisfaction with their knowledge of famous painters and representative works from previous eras. It suggested that “students’ knowledge of famous painters and masterpieces from previous eras may not be as effective as the other two components,” possibly due to ineffective classroom activities or a lack of prior connection with the subject matter.

[Smith et al. \(2005\)](#) found that the extent to which students use different learning materials depends on what they already know. Beginners usually only stick to one type of material - usually any material that feels familiar or easiest to master. In this case, students may find it easier to handle traditional Chinese art and everyday cultural traditions as they are a part of their daily lives. However, as they have not studied famous artists or their masterpieces before, these parts of this lesson do not have a good connection for them.

By analyzing the data, it is evident that students are delighted with using the Seewo Easinote5 application to learn traditional Chinese art and culture. [Rahayu and Makmur \(2024\)](#) concluded that the use of interactive smartboards has an impact on the learning process for both teachers and students. The use of learning media in the teaching and learning process can generate new desires and interests, generate motivation and stimulate learning activities. Educators should consider incorporating the Seewo Easinote5 application into their teaching practices to enhance student engagement, satisfaction, academic performance, and lifelong learning skills.

Conclusion

Overall, the Seewo Easinote5 application can greatly promote elementary school student’s understanding of traditional Chinese art and culture and also enhance the artistic and cultural knowledge of most elementary school students.

Firstly, the Seewo Easinote5 application can significantly help students understand traditional Chinese art and culture, non-heritage art and cultural knowledge in China, as well as famous painters and masterpieces from various dynasties. The most significant progress is their understanding of non-heritage art and culture in China. Secondly, students are delighted with the learning experience of using the Seewo Easinote5 application to teach traditional Chinese art and culture. Especially in the section about traditional Chinese art and cultural knowledge, satisfaction is the highest.

The above findings are of great significance for the implementation of art teaching in primary school classrooms in China, as they validate the effectiveness of the Seewo Easinote5 application in improving primary school students’ knowledge of traditional Chinese art and culture. Therefore, this study also provides strong experimental support for teachers to apply multimedia in art teaching. It can not only help teachers prepare and teach but also enhance students’ interest and learning experience, allowing them to feel the joy brought by art and laying a solid foundation for future learning and life.

In the future, we can further explore the impact of different digital media on students’ independent drawing abilities, especially at various stages of education, and further improve relevant teaching strategies.

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Competing Interests

The authors declare that they have no known competing financial interests or personal relationships that could have appeared to influence the work reported in this paper.

Data Availability Statement

The data that support the findings of this study are available on request from the corresponding author. The data are not publicly available due to privacy or ethical restrictions.

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