



The Development Of WSQ With Mobile Peer Assessment Model To Enhance Creativity And Logical Thinking Skills In Drawing Courses

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ABSTRACT

subject of art education, peer assessment is largely recognized as the most effective teaching strategy. Peer assessment enabled by technology is used in painting workshops to help students reflect on the importance of what they have learnt. But rigorous and precise theoretical knowledge is a prerequisite for reflective practice. Should they be lacking in the theoretical foundation, it could be difficult for pupils to exhibit their paintings in painting lessons. Students' theoretical knowledge reflection is supported by the implementation of a WSQ (Watch-Summary-Question) mobile peer evaluation paradigm. WSQ learning sheets are also utilized in this process. A Chinese institution ran an experiment to see how effective this strategy was. 38 individuals made up the experimental group, who received instruction utilizing the WSQ and mobile peer evaluation techniques. The 37 individuals in the control group received instruction in a traditional classroom environment. Take a look at the artist's degree of originality and reason. The results of the trial show how well the method increases students' capacity for creative and logical thought.

Keywords: watch-summary-question (WSQ) with a Mobile Peer Assessment Model, Creativity, Logical Thinking Skills, Drawing Courses

Introduction

Drawing has been a popular form of visual art for millennia, encompassing a wide range of media, styles, and techniques. It's a medium that allows artists to convey their thoughts, feelings, and experiences in a stylish way. In order to prepare prospective artists for careers in the art industry and to help them improve their talents and creativity, universities should provide drawing education. For a very long time, traditional drawing courses have been offered; they comprise lectures and one-on-one drawing assignments with little to no feedback. However, there are a number of drawbacks to the traditional approach, including a lack of diversity in the subject matter, a narrow focus on creativity, a limited use of technology, and minimal feedback.

The only way to solve these issues is to use innovative teaching approaches for drawing instruction in university art programmes. Technology is becoming more and more common in art schools, especially in drawing lessons. Mobile apps for peer evaluation have become more and more popular in recent years, enabling students to collaborate on tasks and get rapid feedback from their peers (Lukosch et al., 2015). Smartphones and tablets, among other mobile devices, are now indispensable in modern life. Therefore, teachers are interested in bringing these devices into the classroom. There are new opportunities to promote collaborative cognition, feedback provision, and content diversity through the use of mobile peer assessment technology. Also, with the help of mobile peer assessment tools, students can critique each other's work from the convenience of their own smartphones or tablets.

Mobile peer assessment technology has been used successfully in various educational contexts, including language learning, engineering education (Dwyer et al., 2014), and medical education (Hsia et al., 2019).

However, there needs to be more research on using mobile peer assessment technology in teaching drawing at the university level. Therefore, the purpose of using WSQ with a Mobile Peer Assessment Model is to guide students to pay attention to the central idea of learning when watching teaching videos, and to guide them to summarize and ask questions to improve vocal creativity and logical thinking abilities. In order to investigate this study, the following two objectives were mainly studied:

1. To design and develop a WSQ with Mobile Peer Assessment Model for college drawing courses.
2. To study effects of WSQ with Mobile Peer Assessment Model on students' drawing creativity and logical thinking skills.

Literature review

Drawing Course

Drawing classes boost creativity, artistic talent, and mental and physical wellbeing. Research shows that training kids to sketch reduces stress, anxiety, and depression (Barta et al., 2022). Drawing lessons can improve kids' hand-eye coordination, fine motor skills, and spatial awareness, which are needed for artistic expression, according to Hsia et al. (2019). Drawing workshops help students build critical thinking and problem-solving skills by forcing them to find creative solutions to difficult problems (Gardner & Davis, 2013). Drawing lessons improve pupils' mental health, too. Painting lessons may reduce anxiety and depression, according to a research. Drawing sessions reduced depression and anxiety in pupils (Fowler, 2011).

Technology in lesson planning has been studied recently. One study examined digital tools in painting workshops. The study found that tablet computers and digital sketching software can inspire children's creativity and expand their learning and discovery (Edwards, 2012).

Watch-Summary-Question (WSQ)

"Watch-Summarize-Question," or WSQ for short, is a technique that facilitates material organization, assigns responsibility for observing, plans processing time, and solicits student input. Additionally, get ready for the class conversation and assist in facilitating it. In the current study, WSQ was utilized to improve PA activities. Initially, it was suggested by (Hsia et al., 2019).

Mobile Peer Assessment

There are numerous advantages to using mobile peer evaluation in the classroom. It is feasible to incorporate a wider range of viewpoints in the review process because peers can vary in their technical proficiency and aesthetic preferences (Fancourt & Finn, 2019). Peer evaluation can also improve learning results, motivation, and student involvement (Fowler, 2011). Students are more likely to take ownership of their education and develop into reflective thinkers when they are given the task of evaluating their peers (Ashenafi, 2015). Additionally, students gain invaluable expertise in art appraisal through Mobile Peer Assessment, a crucial ability for art professionals (C. Liu et al., 2021).

Peer assessment in drawing can be done successfully with a variety of teaching methodologies. To ensure uniformity and fairness in the evaluation procedure, explicit evaluation criteria and score rubrics have to be developed in advance (Wigert et al., 2022). Furthermore, it is imperative that students receive instruction on how to evaluate artwork appropriately, including how to offer constructive critique (Liu & Carless, 2007). Lastly, educators need to create a secure atmosphere in the classroom where students are comfortable taking chances, communicating honestly, and picking up knowledge from one another (Edwards, 2012).

Drawing Creativity

Drawing creativity generates novel, high-quality, and appropriate visual products or ideas. (Cropley, 2006.) Creativity in drawing involves combining existing elements in new ways and developing new techniques that result in novel and functional outcomes (Runco & Jaeger, 2012). Drawing creativity is generating unique and valuable visual expressions through various drawing techniques (Ammon, 2018).

Drawing creativity involves producing original, aesthetically pleasing drawings and conveying a personal message or emotion (Sawyer, 2011). In addition, drawing creativity refers to the ability to use drawing techniques to produce visual art that is innovative, original, and meaningful (Cropley, 2006).

Logical thinking skills

Logical thinking in drawing involves making decisions based on careful observation, analysis, and reasoning to create a cohesive and well-executed artwork. Using logical thinking in drawing involves careful planning, evaluation, and problem-solving at every creative process stage, from conception to execution (Hoddinott & Combs, 2011). Logical thinking in drawing involves organizing visual elements into a coherent and meaningful composition, considering balance, proportion, rhythm, and harmony (Ammon, 2018). Logical thinking in drawing requires the artist to think critically about the subject matter, considering its context, symbolism, and symbolic potential, to create a work of art that communicates a clear and compelling message (Dwyer et al., 2014). Logical thinking in drawing involves problem-solving skills to overcome technical challenges, such as choosing suitable materials, mastering different techniques, and dealing with unexpected outcomes (Benedek

et al., 2014). Using logical thinking in drawing involves a systematic approach to the creative process, with careful attention to planning, observation, experimentation, and reflection (Edwards, 2012).

Hypotheses underpin study design and empirical assessment, making them crucial to all research projects. This study examines how the WSQ mobile mutual assessment technique affects creativity and critical thinking compared to traditional education. Hypothesis 1 (H1not) states that the experimental group (using the WSQ mobile mutual assessment model) and the control group (using the normal educational approach) have similar creative levels. This argument attacks the WSQ model as a creative stimulant and suggests more research into potential disparities in creative production between the two groups. One alternative hypothesis in Hypothesis 1 (H1) suggests that the WSQ model experimental group is more creative than the control group. This hypothesis argues that the WSQ mobile mutual assessment paradigm and this unique technique will foster creativity and innovation. Hypothesis 2 (H2not) states that the experimental group using the WSQ model and the control group using traditional training methods have similar critical thinking skills. This questions the WSQ method's ability to teach young children critical thinking. Hypothesis 2 (H2) states that WSQ model users in the experimental group had superior critical thinking skills than control group members. This hypothesis could transform education by using the WSQ paradigm for sophisticated critical thinking. We intend to advance the discussion on creative and critical thinking in modern education and the WSQ model's impact on creativity by testing these assumptions. We want to illuminate the complex links between instructional tactics and cognitive results and the transformative potential of mobile mutual assessment models in education by carefully constructing and analyzing these hypotheses.

H1not: The experimental group using the WSQ mobile mutual assessment model is significantly not more creative than the control group using the traditional teaching model.

H1: The experimental group using the WSQ mobile mutual assessment model is significantly more creative than the control group using the traditional teaching model.

H2not: The experimental group using the WSQ mobile mutual assessment model is significantly have not better critical thinking than the control group using the traditional teaching model.

H2: The experimental group using the WSQ mobile mutual assessment model is significantly have better critical thinking than the control group using the traditional teaching model.

Research method

The Design and Develop of WSQ with Mobile Peer Assessment Model

Using both practical experience and a review of existing literature, the researcher created and implemented the WSQ with Mobile Peer Assessment Model teaching model (version 1.0). The model consists of four steps: teaching, which involves watching, summarising, questioning, and mobile peer assessment. It was originally created for both teachers and students. Methods employed in the instruction of painting topics. Figure 1 depicts the design model.

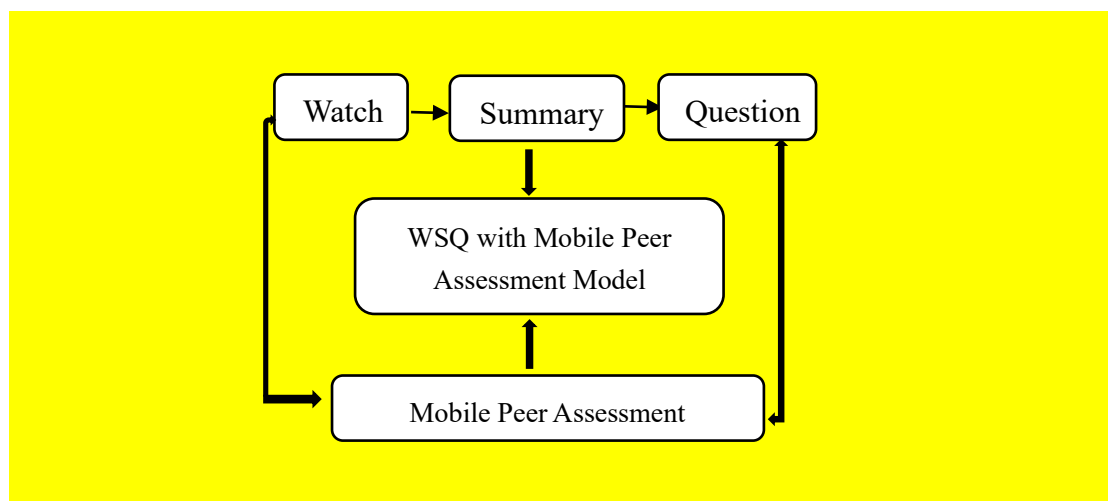


Figure 1 WSQ with Mobile Peer Assessment Model (Version 1.0)

The authors enlisted the expertise of five professionals in relevant fields to perform a rigorous assessment of the new teaching model for the drawing course. Additionally, they conducted a survey using a questionnaire to gather feedback on the evaluation of the WSQ with Mobile Peer Assessment Model. The subsequent content pertains to the perspectives of these specialists:

Table 1: Summary of experts' views

Name	School	Opinions	Summary
Liu Ji hua	University of Science and Technology of China	"I think the application of mobile mutual evaluation technology in painting courses is a kind of Innovation that can enhance student interaction and cultivate students' Creativity and logical thinking ability.	As a new teaching model, almost all experts are optimistic, which shows that this new teaching model may indeed have the ability to attract and motivate students. We can also
		Students can immediately receive feedback on their works and improve their painting skills in real-time through such a platform."	consider the broader use of this technology in future educational research and practice.
Ning Cai you	Tsinghua University	"I think mobile mutual evaluation technology has great potential in art education. It allows students to share their work in time, receive feedback, and make improvements to enhance student's overall learning experience. This technology brings immediacy and convenience, but we must also be wary that it may mask the meaning of face-to-face interaction."	Some experts pointed out that when designing teaching activities, it is necessary to balance Innovation and logical thinking to ensure that all students can benefit.
Wang Ying	Shanxi University Art Academy	"I think using mobile assessment technology can fully arouse students' enthusiasm for learning, increase their participation in learning, and have a stronger desire to explore art at a deeper level. But I think that in implementing specific curriculum activities, we should pay attention to the differences of students."	We should teach students according to their aptitude, which varies from person to person. Painting course is different from other courses and pays more attention to practice.
Yang Yan	Central Academy of Fine Arts	"I support the incorporation of mobile peer assessment technology in drawing courses. It allows students to receive and provide feedback outside of the classroom, ultimately improving the quality of their artwork. However, we must be cautious of over-dependence on technology, which may undermine the development of independent thinking."	The purpose of applying the new model is to improve learners' Creativity in painting, emphasizing after-class practice and sublimation.
Wang Shao hua	Beijing University	"I think the mobile peer review technology used in drawing courses has advantages and disadvantages. In teaching, we should always pay attention to the individualization of learners and the simplification of learning methods to avoid sameness."	In implementing the teaching model, we must regularly collect and analyze students' feedback to adjust the teaching plan and maximize its effect.

The Experiment of WSQ with Mobile Peer Assessment Model

Participant

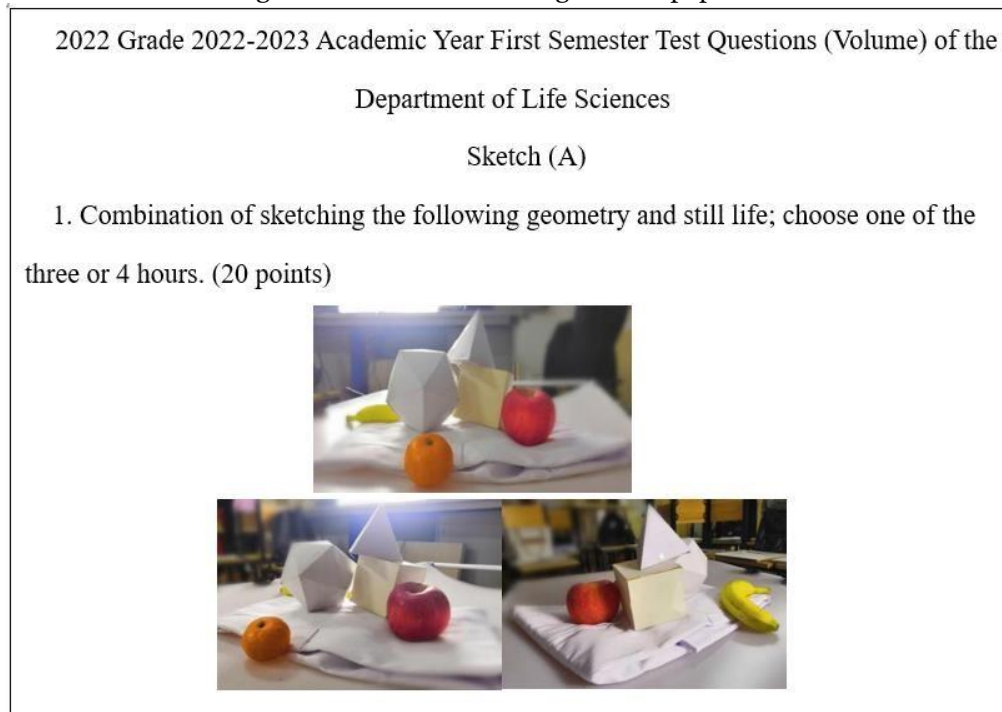
The current participants of the experimental study consist of first-year students who are pursuing a major in gardening at Luliang College. Utilising the cluster sampling technique, two classes were chosen from a total of

six classes. One class, consisting of 38 students, was designated as the experimental group, while the other class, comprising 37 students, was assigned as the control group.

Research instrument

Paper test and CDAT/DIT

Figure 2: This is the drawing courses paper test:



The examination paper assessment criteria are based on the following 2 test criteria: Details are shown in Table 2 and 3 below.

Table 2: Creative Drawing Activities Test (CDAT)

Name:	ID:	Date:		
Scoring Dimensions	Scoring Criteria		Scoring Range	Record score
Originality	1 points: The sketch contains no original ideas or is a direct copy of another work. 2 points: The drawing contains some initial ideas or concepts that are not fully developed or unique. 3 points: The sketch has well-developed original ideas or images demonstrating uniqueness. 4 points: The drawing contains original and innovative ideas or fully developed pictures demonstrating originality.		4	
Elaboration	1 points: The sketch is simple and lacks detailed or complex elements. 2 points: The drawing contains some essential elements or lacks welldeveloped or specific features. 3 points: The sketch has detailed and well-developed elements or features that enhance the overall quality of the work. 4 points: The drawing contains highly elaborate and complex elements or features well-integrated into the work.		4	

Fluency	<p>1 points: The sketch contains few or no ideas or solutions.</p> <p>2 points: The drawing includes some basic ideas or solutions that must be well-developed or fully explored.</p> <p>3 points: The drawing contains multiple ideas or solutions that are well-developed and thoroughly explored.</p>	4	
	4 points: The drawing has many highly developed and thoroughly explored ideas or solutions.		
Flexibility	<p>1 points: The sketch contains no diverse or alternative ideas or solutions.</p> <p>2 points: The drawing has some essential various or alternative visions or solutions that must be well-developed or fully explored.</p> <p>3 points: The sketch has multiple well-developed and thoroughly explored diverse or alternative ideas or solutions.</p> <p>4 points: The sketch includes many highly developed and thoroughly explored various or alternative visions or solutions.</p>	4	
Visual problemsolving	<p>1 points: The sketch demonstrates no visual problem-solving skills.</p> <p>2 points: The illustration shows some basic graphic problem-solving skills but must be more developed or fully utilized.</p> <p>3 points: The sketch demonstrates well-developed and fully utilized visual problem-solving skills.</p> <p>4 points: The graphic shows highly effective and innovative visual problem-solving skills.</p>	4	
Subtotal		20	

Table 3: Drawing Inference Test (DIT)

Name:	ID:	Date:		
Scoring Criteria	Scoring Criteria Details		Scoring Range	Record score
Completeness	<p>1 points: No attempt to complete the drawing</p> <p>2 points: Incomplete drawing with no logical connection to the original drawing</p> <p>3points: Incomplete drawing with some logical connection to the original drawing</p> <p>4 points: Complete the drawing with a logical connection to the original drawing.</p>		4	
Coherence	<p>1 points: No logical connection between elements in the drawing</p> <p>2 points: Some logical connection between elements in the drawing</p> <p>3 points: Good logical connection between elements in the drawing</p> <p>4 points: Excellent logical connection between elements in the drawing.</p>		4	
Creativity	<p>points: No attempt at creativity or originality</p> <p>points: Some degree of creativity or originality shown</p> <p>points: Good degree of creativity or originality shown</p> <p>points: Excellent degree of creativity or originality shown.</p>		4	
Integration	<p>1 points: No attempt at integrating different elements in the drawing</p> <p>2 points: Some degree of integration is shown, but not coherent</p> <p>3 points: Good degree of integration shown, with some coherence</p> <p>4 points: Excellent degree of integration shown, with complete coherence.</p>		4	

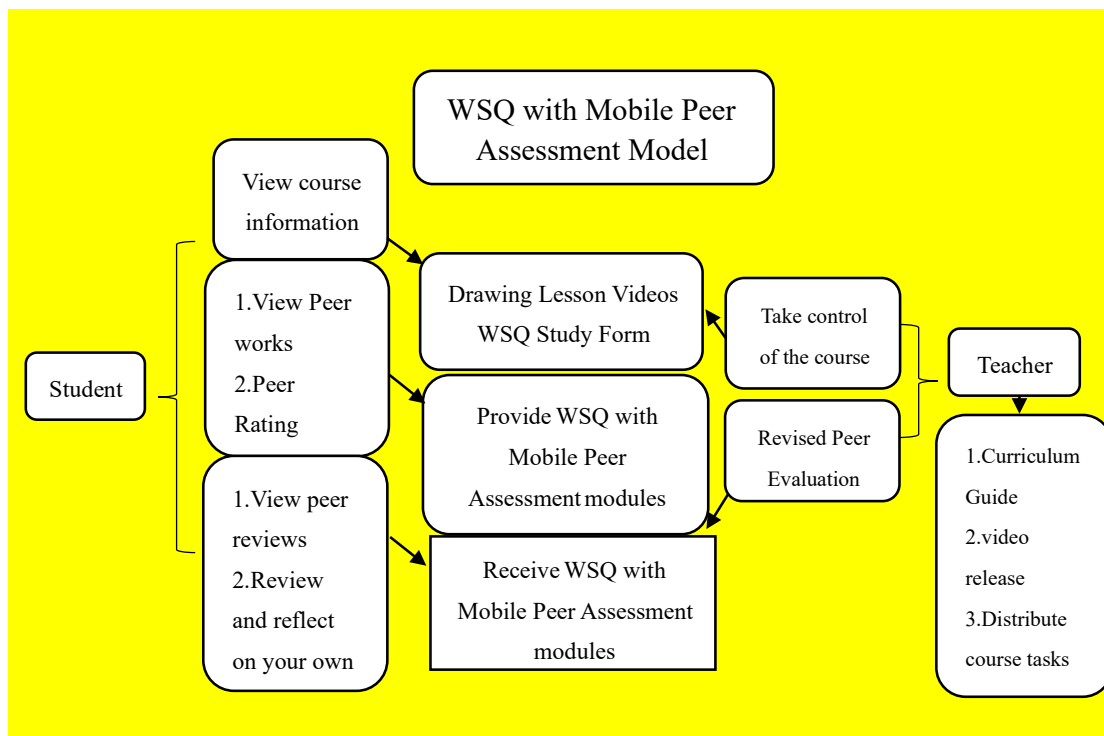


Figure 2 WSQ with Mobile Peer Assessment Model (Version 2.0)

The researchers designed four sets of 20-question evaluation forms to facilitate smoother implementation of the model. Five experts spoke highly of the WSQ mobile peer assessment model in the painting course. The descriptive statistics of experts' evaluation results are shown in the following table:

Table 5: The quality of WSQ with Mobile Peer Assessment Model evaluation by experts(N=5)

Dimensions(Question)	Mean	SD
1.Comprehensive Evaluation of Mobile Mutual Assessment Technology-Based Teaching and Learning Models.(1-5)	4.5	0.4
2. WSQ with Mobile Peer Assessment Model on Learners' Creativity, Logical Thinking, and Initiative.(6-10)	4.5	0.3
3. Enhancing Learning Outcomes through WSQ with Mobile Peer Assessment Model in Drawing Courses.(11-15)	4.4	0.3
4.Utilize mobile peer assessment technology to promote positive learning experiences for learners.(16-20)	4.5	0.3
Total	4.5	0.3

4.2. Results of the impact of teaching WSQ with Mobile Peer Assessment Model on learners' creativity and logical thinking skills.

Before the experiment, to further ensure that the previous test scores between the experimental group and the control group were not significantly different, their scores were as follows:

Table 6: Normality test of pre-test

	Dependent Variables	Group	Shapiro-Wilk		
			Statistic	df	Sig.
Pre-test	Creativity	Experiment group	.18	38	.13
		Control group	.13	37	.09
	Logical think skill	Experiment group	.19	38	.14
		Control group	.13	37	.08

The results show that sig: 0.13/0.09 for creativity experimental and control groups, sig: 0.14/0.09 for Logical thinking skill experimental and control groups, and two-tailed p-values for both variables are more significant than 0.05. This indicates that we do not have enough evidence to reject the null hypothesis that the data follow a normal distribution. In statistics, if the P-value is more significant than the chosen significance level (usually 0.05), we accept the null hypothesis, which means that the data are statistically considered to follow a normal distribution.

Table 7: Box's Test of Equality of Covariance Matrix and Bartlett's Test of Sphericity in the pre-test scores of creativity and Logical think skill

	Box's Test of Equality of Covariance Matrix	Bartlett's Test of Sphericity
Pre-test scores of creativity and Logical think skill Sig. Value	.03	.00

p=0.03 (more significant than 0.001). Therefore, the covariance matrices are equal. In order to further verify the correlation between the dependent variables, we used Bartlett's test. The Sig value is 0.00. Less than 0.05, indicating that there is a certain correlation between the two dependent variables.

Table 8: MANOVA result in the pre-test scores of creativity and Logical think skill

Wilks' Lambda	Value	F	Sig.
	0.01	4.23 ^b	.89

study, F=4.23, P=0.89 (sig value greater than 0.05), Wilks' Lambda =0.01, so there is no statistically significant difference between the experimental and control groups in terms of creativity and logical thinking skills in the drawing course.

Through the pre-test, the researcher conducted the final test of the experiment, and the following test scores are for both groups. The researcher conducted a competition between the experimental group (run using WSQ with mobile peer assessment model) and the control group (using traditional teaching model). The test results are shown in and the score results are as follows:

To ensure the accuracy and reliability of the analyzed results, we conducted normality and covariance tests on the data. Through the normality test, we found that the participants' post-test scores obeyed a normal distribution. The results are as follows:

Table 9: Tests of Normality of Post-test

	Dependent Variables	Group	Shapiro-Wilk		
			Statistic	df	Sig.
Post-test	Creativity	Experiment group	.20	38	.28
		Control group	.15	37	.07
	Logical think skill	Experiment group	.19	38	.24
		Control group	.13	37	.09

The results show that Sig: 0.28/0.07 for creativity experimental and control groups, Sig: 0.24/0.09 for Logical thinking skill experimental and control groups, and two-tailed p-values for both variables are more significant than 0.05. This indicates that we do not have enough evidence to reject the null hypothesis that the data follow a normal distribution. In statistics, if the P-value is more significant than the chosen significance level (usually 0.05), we accept the null hypothesis, which means that the data are statistically considered to follow a normal distribution.

Table 10: Box's Test of Equality of Covariance Matrices and Bartlett's Test of Sphericity in the post-test scores of creativity and Logical think skill

	Box's Test of Equality of Covariance Matrix	Bartlett's Test of Sphericity
Pre-test scores of creativity and Logical think skill Sig. Value	.05	.00

The Table 10 shows that the variance-covariance matrices of the two dependent variables are equal to p=0.05(which is more significant than 0.001). Therefore, the covariance matrices are equal. Bartlett's test was

used to further test the correlation between dependent variables. The Sig value is 0.00. Less than 0.05 indicates a certain correlation between the two dependent variables.

Table 11: MANOVA result in the post-test

Wilks' Lambda	Value	F	Sig.
	0.88	9.00	.01

scores of creativity and Logical think skill

In this study, $F=9.00$, $P=0.01$ (sig value less than 0.05), Wilks' Lambda =0.88; partial $\eta^2=0.13$, so there is a statistically significant difference between Creativity and Logical thinking skill in the drawing course in the experimental and control group

Table 12: Compare post-test scores of Creativity between the Control and Experiment groups.

DV	IV	\bar{X}	SD	n	F	Sig
Creativity	Experiment group	19.57	0.32	38	0.40	0.01
	Control group	15.2	0.27	37		

Table 13: Compare post-test scores of Logical thinking skills between the Control and Experiment groups.

DV	IV	\bar{X}	SD	n	F	Sig
Logical skill think	Experiment group	19.57	0.05	38	0.49	0.00
	Control group	15.3	0.08	37		

The results show the corresponding Creativity: sig= 0.01 and Logical thinking skill: sig= 0.00 (less than 0.05). This means that we can reject the null hypothesis (i.e., no significant difference between the scores of the experimental and control groups) and accept the alternative view (i.e., there is a considerable difference between the scores of the experimental and control groups). In other words, the experimental group using the WSQ mobile mutual assessment model performed significantly better than the control group using the traditional teaching model. This result is in line with the expectations and hypotheses.

Hypothesis	Acceptance
H1not: The experimental group using the WSQ mobile mutual assessment model is significantly not more creative than the control group using the traditional teaching model.	Not-Supported
H1: The experimental group using the WSQ mobile mutual assessment model is significantly more creative than the control group using the traditional teaching model.	Accepted
H2not: The experimental group using the WSQ mobile mutual assessment model is significantly have not better critical thinking than the control group using the traditional teaching model.	Not-Supported
H2: The experimental group using the WSQ mobile mutual assessment model is significantly have better critical thinking than the control group using the traditional teaching model.	Accepted

Discussion

Mobile Peer Assessment has excellent advantages in facilitating learner outcomes. A study by (C. Liu et al., 2021) found that Mobile Peer Assessment Technology improves students' critical thinking skills and enhances their understanding of course content. Mobile inter-assessment technology has been demonstrated in another study (Planas Lladó et al., 2013) to enhance student interest and involvement in the learning process. The results of this study, which assessed the usefulness of WSQ with Mobile Peer Assessment in drawing classes, shown that this approach can boost students' motivation and provide timely feedback from peers and important teachers, which will ultimately improve their drawing abilities.

The WSQ method has been applied in education to help pupils become more proficient academically and critically thinkers. Studies have indicated that the implementation of Mobile Peer Assessment can enhance students' engagement, collaboration, and academic achievement. For instance, Hsia et al.'s 2022 study discovered that enhancing student engagement and participation while fostering critical thinking abilities was possible when integrating Mobile Peer Assessment with a WSQ strategy. This study emphasises how crucial WSQ learning is to raising student performance. In order to better serve students, this information aids in the development and implementation of instructional programmes and supports the WSQ with Mobile Peer Assessment paradigm.

Academic accomplishment of students in the WSQ approach versus the traditional teaching paradigm varies significantly (Hsia et al., 2019). In this study, learners in the experimental group significantly outperformed learners in the control group in drawing and logical thinking skills. Future studies can further investigate how to improve the attitude of art learners in general.

This study required drawing creativity and logical thinking skills for drawing learners. The test of this ability requires learners to perform according to the test criteria. The pre-test test results showed little difference between the performance of the learners in the experimental group and the control group. The researcher believes that the experimental group won the test and scored significantly higher than the control group because the experimental group incorporated the watch-summary-question (WSQ) strategy in the learning process.(Hsia et al., 2022).

The implications of theories about how the WSQ mobile mutual assessment model affects creativity and critical thinking reveal fascinating new information. H1not states that the experimental group using the WSQ model will not be more creative than the control group using the traditional teaching model. The data disproved the hypothesis that the experimental group was as creative as the control group. The second hypothesis (H1) predicted that the WSQ model would make the experimental group significantly more creative than the control group. The WSQ mobile mutual assessment model increased participants' creativity, unlike the traditional teaching model, supporting this theory.

Using the WSQ model, the third critical thinking hypothesis (H2not) predicted no statistically significant difference in critical thinking between the control and experimental groups. Contrary to this theory, the WSQ model improved the experimental group's critical thinking. H2, the fourth hypothesis, states that the experimental group using the WSQ model would perform significantly better in critical thinking than the control group. The data showed that the WSQ mobile mutual assessment model develops critical thinking.

These findings demonstrate the complex relationship between instructional strategies and cognitive outcomes and shed light on mobile-assisted learning strategies in the classroom.

The watch-summary-question (WSQ) strategy has been recognized as effective in guiding students to think in depth during the learning process. In addition to the WSQ learning(G.-H. Hwang et al., 2018), what is needed in a drawing course is persistent endurance and confidence to improve as one learns and to improve as one progresses. Learners will improve their drawing skills to a great extent if they persist. Future research can further investigate how to upgrade the teaching model of WSQ and improve learners' learning more comprehensively.

Conclusions

The use of mobile technology has gained considerable attention in recent years as a method of facilitating drawing education. The lack of certain technologies in the field of painting education impedes the ability to carry out research on innovative teaching methods. This study entailed a 4-week experiment carried out at a university to evaluate the effectiveness of the WSQ with Mobile Peer Assessment Model in a drawing course. Assess the artistic creativity and analytical reasoning skills of the learners. Furthermore, we utilized a questionnaire to determine the degree of satisfaction among students who utilized the WSQ with Mobile Peer Assessment Model.

Limitations and future directions

Although this study has offered valuable insights into the impacts of WSQ and Mobile Peer Assessment Technology in art education, it is critical to acknowledge its limitations. Future research might expand on this work by using mixed-methods techniques, researching other cultural settings, exploring new creative domains, and addressing the scalability and sustainability of these technologies. These study paths will contribute to a better understanding of the potential of WSQ and Mobile Peer Assessment Technology in boosting creative growth and informing the implementation of successful pedagogical methods in art education.

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Appendix : Lesson Plan

The specific content of teaching activities of WSQ with Mobile Peer Assessment model					
Week	Content	Objectives	Teacher activities	Student Activities	evaluate
1	Chapter 2 Section 4: Light and Shadow Sketch 1•	Students will understand the basic principles of light and shadow in the drawing. To teach students how to create light and	Upload the course theme video before class, notify students, and let students fill in the WSQ study form after watching the video. Bring the questions in the WSQ form into the essential explanations in the classroom	By watching the video, according to the requirements, carefully fill in the WSQ study form and upload it to the WeChat group listen carefully	1. WSQ Study Sheet 2. Draw a single geometric body of a light and dark sketch, 8motif size,

		shadow effects using pencils To encourage students to observe and analyze real-life objects for accurate representation in their sketches	Demonstration of sketching techniques Teach students how to observe still life. Peer review and feedback Summarizing and reflecting on learning	Practice observing still life and try to practice drawing. If you have problems during the drawing process, you can ask questions for one-on-one guidance. Use of mobile assessment technology and selfreflection Class discussion and self-reflection	and complete it in 3 hours.
2	Chapter 2 Section 4: Light and Shadow Sketch 2•	To teach students the basic techniques of creating light and shadow in sketches. To encourage students to apply their knowledge of light and shadow to create their sketches.	Upload the course theme video before class, notify students, and let students fill in the WSQ study form after watching the video. Bring the questions in the WSQ form into the essential explanations in the classroom Demonstrate various techniques for creating light and shadow, such as cross-hatching, stippling, and smudging. Please encourage students to experiment with different techniques and find their style.	By watching the video, according to the requirements, carefully fill in the WSQ study form and upload it to the WeChat group listen carefully Watch the teacher's demonstrations of various techniques for creating light and shadow. Experiment with different techniques to find a personal style	1. WSQ Study Sheet 2. Draw a combined still life of light and dark sketches, the size of the 8-motif paper, and complete them in 3 hours.

		Please provide feedback and guidance to students as they work on their sketches.	Seek feedback and guidance from the teacher as needed.
		Assign a project for students to create a sketch that effectively uses light and shadow. Please encourage students to reflect on their learning	Work independently to create the sketch, experimenting with different techniques as needed.

			and identify improvement areas.	Share the sketch with peers and receive feedback. Reflect on the learning experience and identify areas for improvement.	
3	Chapter 3 Section 1: Sketch and creation•	Master the basics of sketching. Arrange and combine what you have learned to create your works.	Upload the course theme video before class, notify students, and let students fill in the WSQ study form after watching the video. Bring the questions in the WSQ form into the essential explanations in the classroom Lead students to watch excellent works and tell them the advantages and disadvantages of each piece. Then, explain the	By watching the video, according to the requirements, carefully fill in the WSQ study form and upload it to the WeChat group listen carefully Listen carefully, review what you have learned, conceive the idea of drawing creation, and create a slight draft.	1. WSQ Study Sheet 2. Sketch still life Has innovative features. 8motif size, and complete in 3 hours.

			<p>precautions for drawing creation, give students a subject to depict a corner of still life, encourage students to reorganize their knowledge base, and create drawings.</p>															
			<p>Peer review and feedback</p>	<p>Use of mobile assessment technology and selfreflection</p>														
			<p>Summarizing and reflecting on learning</p>	<p>Class discussion and self-reflection</p>														
<p>4</p>	<p>Chapter 4 Section 1: Geometry</p> <table border="1" data-bbox="204 1308 762 2018"> <tr> <td data-bbox="209 1308 272 1473"></td> <td data-bbox="272 1308 443 1473"> <p>importance in developing drawing skills</p> </td> <td data-bbox="443 1308 628 1473"></td> <td data-bbox="628 1308 762 2018" rowspan="4"> <p>geometry, cloth pattern, etc., eight paper size, 4 hours to complete</p> </td> </tr> <tr> <td data-bbox="209 1473 272 1666"></td> <td data-bbox="272 1473 443 1666"> <p>Demonstrate the steps and precautions of geometry sketching</p> </td> <td data-bbox="443 1473 628 1666"> <p>Carefully watch the teacher's demonstration teaching</p> </td> </tr> <tr> <td data-bbox="209 1666 272 1859"></td> <td data-bbox="272 1666 443 1859"> <p>Assign tasks for students to paint within the specified time</p> </td> <td data-bbox="443 1666 628 1859"> <p>Create drawings carefully and finish them on time</p> </td> </tr> <tr> <td data-bbox="209 1859 272 2018"></td> <td data-bbox="272 1859 443 2018"> <p>Feedback and criticism of classroom exercises</p> </td> <td data-bbox="443 1859 628 2018"> <p>Receiving and Reflective Assessments</p> </td> </tr> </table> <p>Overall result:</p>		<p>importance in developing drawing skills</p>		<p>geometry, cloth pattern, etc., eight paper size, 4 hours to complete</p>		<p>Demonstrate the steps and precautions of geometry sketching</p>	<p>Carefully watch the teacher's demonstration teaching</p>		<p>Assign tasks for students to paint within the specified time</p>	<p>Create drawings carefully and finish them on time</p>		<p>Feedback and criticism of classroom exercises</p>	<p>Receiving and Reflective Assessments</p>	<p>Improve students' ability to observe and analyze geometric still life and create works of their style.</p>	<p>Upload the course theme video before class, issue a notice to students, let students fill in the WSQ study form after watching the video</p>	<p>By watching the video, according to the requirements, carefully fill in the WSQ study form and upload it to the WeChat group</p>	<p>1. WSQ Study Sheet 2. Sketch still life; the theme is accurate life sketch, including fruit,</p>
	<p>importance in developing drawing skills</p>		<p>geometry, cloth pattern, etc., eight paper size, 4 hours to complete</p>															
	<p>Demonstrate the steps and precautions of geometry sketching</p>	<p>Carefully watch the teacher's demonstration teaching</p>																
	<p>Assign tasks for students to paint within the specified time</p>	<p>Create drawings carefully and finish them on time</p>																
	<p>Feedback and criticism of classroom exercises</p>	<p>Receiving and Reflective Assessments</p>																
			<p>Introduction to geometry still life sketching and its</p>	<p>listen carefully</p>														

WSQ Study Sheet (30%) Peer Evaluation (20%) Final Project (50%)			
Still Life			