

ANALYZING THE EFFECTS OF UTILIZING SCAFFOLDING STRATEGIES IN STUDENTS' ILLUSTRATION AND THEIR MOTIVATION IN LEARNING

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ABSTRACT

The aims of this study are to analyze the use of the scaffolding teaching method to enhance students' illustration. This study uses a quasi-experimental design. The Experimental Group was taught illustration using the scaffolding teaching method and the Control Group was taught using the conventional method. In this research, the scaffolding teaching method is applied to four different illustration techniques firstly straight lines and short lines in the illustration of a building. second, curve, regular lines, and irregular lines in illustration of plants. third, the force and movement of the lines and the dynamic in the illustration of animals. The sample consisted of 80 students majoring in illustration from Qingdao Huanghai University. In the pre-test students from both the groups were tested on four themes buildings (firstly straight lines and short lines), plants (curve, regular lines, and irregular lines), and animals (force and movement of the lines and the dynamic and their illustrations were graded by professional illustration lecturers. The experiment was carried out for eight weeks. After the intervention, the post-test was administered for both groups. The content of both test is similar which consist of four questions. Findings from the quantitative data show that the scaffolding teaching method helped to improve students' illustration significantly in the area of straight lines and short lines, curves, regular lines, and irregular lines; force and movement of the lines, and the dynamic in comparison to the control group who we taught using the conventional method. Therefore, it can be concluded that the scaffolding teaching method can be used as an alternative method by lecturers in teaching illustration.

Keywords: Scaffolding Strategies, Illustration, Motivation, Chinese undergraduates

1.0 INTRODUCTION

1.1 Background of the study

The implementation of this topic is to carry out and implement the scaffolding education model and use the scaffolding teaching concept to improve students' illustrations' learning effect and the motivation of learning illustrations (Gao Rongsheng, 2015).

The increase in knowledge level gradually faded out. Through this kind of help, learners (such as illustration students) can finally complete the learning tasks assigned by the teacher

independently. The scaffolding teaching model is defined as: "The scaffolding teaching should provide a conceptual framework for the learner to construct an understanding of knowledge. The concepts in this framework are needed for the developer's further understanding of the problem. Decomposing complex learning tasks to graduate lead the learners' understanding of deeper Vygotsky believes that there may be differences between the problems to be solved and the original abilities in children's intellectual activities. With the help of teachers, children can eliminate this difference.

However, illustration is an interdisciplinary profession. Its original meaning is: "Pictures inserted in the middle of the text help explain the content." This is also the primary function of illustrations. The relationship between pictures and texts is studied as a subject, from directness, indirectness, concrete to abstract, etc., as a visual communication analysis of ideas, making illustration teaching a highly academic subject. The so-called picture-text relationship studies "pictures" and studies "text" in depth.

Stylization has a shared aesthetic sense and also has aesthetic value. The picture and the text result from the differentiation of the same body, and the origin of the history of Chinese and foreign illustrations is the same. Illustration and illustration art cannot only draw equal signs (Zhang Q, 2014). Illustration generally refers to pictures in information transmission. News photos in newspapers and illustrations in scientific and technological books are all included in illustrations, while illustration art is my visual language. The ability, creative achievements, could artistic expression. This article will start with illustration art, which is referred to as an illustration in the article. With the rapid development of the publishing industry today, the demand for illustrations has soared (Gao Rongsheng, 2015).

Nowadays, this kind of learning environment has become a hot spot. How to design a scaffolding learning method has become an urgent problem for many teachers. The author combines the practical teaching of the illustrated language and the educational learning environment model supported by "scaffolding". Practice in-depth reflection and excavation, combine the two's education models to arrive at this topic and use scaffolding strategies to improve students' illustrations' learning effect and the motivation of learning illustrations.

1.2 Research Questions

1. Is there a significant difference between the Experimental Group (using scaffolding strategies) compared the Control Group (using the conventional method) in their mean score for Straight Lines And Short Lines in the illustration of the Great Wall of China
2. Is there a significant difference between the Experimental Group (using scaffolding strategies) compared with the Control Group (using the conventional method) in their mean score for Curve, Regular Lines, And Irregular Lines in the illustration of plants
3. Is there a significant difference between the Experimental Group (using scaffolding strategies) compared with the Control Group (using the conventional method) in their mean score for the Force And Movement Of The Lines And The Dynamic in illustration of animals?

2.0 REVIEW OF LITERATURE

According to Brooks, Jacqueline Grennon, & Brooks, Martin (1999), The "scaffolding" teaching theory has a very important guiding significance for art classes, especially art teaching. By using some expressive techniques in art as a "scaffold" to assist college art teaching, students can easily accept course content and improve their ability to learn art subjects. As a teacher, he can appropriately infiltrate art theory-related knowledge in college art classroom teaching, which can allow students to have emotional resonance and cultural identity, stimulate students' aesthetic taste, and promote the formation and development of their self-esthetic world so that they can actively participate in the exploration in the field of art is being inherited and developed. Because students have different perceptions of art, it is very important for teachers to choose a method that suits the students' level (Eisner, Elliot, 2022).

Here is some scaffolding strategies adapted from Damoward (2018):

1. The teacher gives students a simplified version of an art outcome, and then gradually increases the complexity, difficulty, or sophistication over time.
2. The teacher describes or illustrates a concept, problem, or process in multiple ways to ensure understanding.
3. Students are shown an exemplar or model of an art outcome they will be asked to complete.
4. Students are given a demonstration of skills before they attempt a difficult task.
5. The teacher clearly describes the purpose of a learning activity, the directions students need to follow, and the learning goals they are expected to achieve.
6. The teacher explicitly describes how the new lesson builds on the knowledge and skills students were taught in a previous lesson.

Hogan, Kathleen, & Pressley, Michael (1997) Teachers use multimedia and other teaching methods to demonstrate the master's work, to form a certain correct aesthetic taste for students to shape, through the current high-tech, such as immersive painting works or scene-based works, create situations for students. According to Balbi, Juan (2008) Teachers must first help students establish learning goals and establish the direction of independent inquiry learning for students. Then let students familiarize themselves with the expression techniques, composition, light and shadow effects, dynamic details, and texture shaping of artistic works. "Close contact" with the works of art masters can enable students to form a preliminary understanding of the correct aesthetic state and pave the way for the next step of independent exploration.

2.1 Teaching mode in illustration teaching

Independence painting usually uses sketching and sketching colors as the basis of creation, but illustration uses black and white painting as an introductory course, emphasizing generalization and profound meaning. "Black and white painting" is a highly generalized form of painting, not only suitable for illustration creation but also the basis of black and white woodcuts. Black-and-white modeling has a series of advantages such as concise language, general technique, and bright effect (Fang, 2008).

In the traditional sense, illustrations are mainly hand-painted. Various painting tools can be used to try out. After the emergence of digital printing technology, it has gradually entered the mainstream of illustration creation, enriching the illustrated pictures to a certain extent, and all kinds of handmade Three-dimensional works or embossed works can also be used to make illustrations (Gao, 2010). Although the above techniques are quite different, they can also be combined.

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2.3 The role of scaffolding strategies in learning

The traditional teaching idea takes examination-oriented education as the core guiding ideology, which is not conducive to the growth and development of students (Denver School of the Art). In traditional teaching, teachers are the absolute soul of teaching activities, and they have absolute teaching leadership, "absolute right leads to absolute abuse" (Meichenbaum, Donald, & Biemiller, Andrew, 1998). The scaffolding teaching concept is the derivative and development of the quality education concept, which can well reflect the core value of quality education (Manning, Brenda H., & Payne, Beverly, 1996).

Teaching is not only the knowledge learned by students but also the organic combination of teaching materials, teaching ideas, and teaching methods (Joseph Lathan, 2022). Therefore, teachers and students must be good at using basic theoretical knowledge. Teachers should also keep in mind the theoretical course, and through the research of theoretical knowledge, guide students to use the framework of theoretical knowledge from the art to actively construct the framework of self-learning (Charles Kivunja, 2018).

3.0 METHODOLOGY

This research was conducted at the Art College of Qingdao Huanghai University, Qingdao City, Shandong Province, China. The sample population comes from the same professional field (illustration major) in this public university in China. In this study, the researchers used purposive sampling and non-random sampling to select students as specimens to represent the population to be studied. These two groups have (a) 40 junior students majoring in illustration in the experimental group. (b) 40 junior students majoring in illustration served as

a control group. They perform at an intermediate level in most subjects, but their abilities in the professional exams for illustration are not the same.

The drawing test is used as a tool for quantitative data collection. Students are required to complete five illustrations within two weeks as a test. The lecturer will score the illustrated performance of the students with the title provided by the researcher, and their performance status will be recorded.

4.0 RESULTS AND DISCUSSION

RQ1. Is there a significant difference between the Experimental Group (using scaffolding strategies) compared the Control Group (using the conventional method) in their mean score for Straight Lines and Short Lines in the illustration of the Great Wall of China?

Hypothesis 1: There is no significant difference between the Experimental Group (using scaffolding strategies) and the Control Group (using the conventional method) in their mean score for Straight Lines and Short Lines in the illustration of Building.

Table-1a.

Comparison of the Experimental Group in their mean score for straight lines and short lines in the illustration of Building in the pre-test?

	<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Mean Different</i>	<i>t-value</i>	<i>df</i>	<i>p-value</i>
<i>Buildings</i>	<i>1</i>	<i>40</i>	<i>71.32</i>	<i>7.85</i>	<i>2.07</i>	<i>1.25</i>	<i>78</i>	<i>.780</i>
	<i>2</i>	<i>40</i>	<i>69.25</i>	<i>7.00</i>				

Note: The level of significance is at $p < 0.05$

Table 1a. displays the students' mean scores for illustration of the Great Wall of China before the intervention. The mean score of the Experimental Group was 71.32 while the Control Group was 69.25. The results from the independent-samples t-test show that there was no significant difference between the mean scores of students of the experimental and control groups for their performance in the illustration of the Great Wall of China prior to intervention (Mean difference= 2.07, $t = 1.25$, $df = 78$, $p = .780$).

Table-1b.

Comparison of the Experimental Group in their mean score for straight lines and short lines in the illustration of Building in the post-test?

	<i>Group</i>	<i>N</i>	<i>Mean</i>	<i>Std. Deviation</i>	<i>Mean Different</i>	<i>t-value</i>	<i>df</i>	<i>p-value</i>
<i>Buildings</i>	<i>1</i>	<i>40</i>	<i>86.20</i>	<i>4.81</i>	<i>16.2</i>	<i>12.1</i>	<i>78</i>	<i>.005</i>
	<i>2</i>	<i>40</i>	<i>70.00</i>	<i>6.96</i>				

Note: The level of significance is at $p < 0.05$

Table 1b. shows that the total score of the experimental group (Mean=86.2, SD=4.81) was higher than that of the control group (Mean=70, SD=6.96). The independent sample t-test

results showed that the overall scores of Straight Lines and Short Lines in the illustration of the Great Wall of China of the experimental group were significantly higher than those of the control group (t -value=12.1, df =78, p =0.005). Therefore, the results failed to accept H_0 . The findings in Table 1b show that the utilization of straight lines and short lines in teaching illustration of the Great Wall of China realized significant progress in the Experimental Group.

RQ2: Is there a significant difference between the Experimental Group (using scaffolding strategies) compared with the Control Group (using the conventional method) in their mean score for Curve, Regular Lines, And Irregular Lines in the illustration of plants?

Hypothesis 2: There is no significant difference between the Experimental Group (using scaffolding strategies) and the Control Group (using the conventional method) in their mean score for Curves, Regular Lines, And Irregular Lines in the illustration of plants.

Table-2a.

Comparison of the Experimental Group (using scaffolding strategies) compared with the Control Group (using the conventional method) in their mean score for curve, regular lines, and irregular lines in illustration of plants in the pre-test?

	Group	N	Mean	Std. Deviation	Mean Different	t-value	df	p-value
Plants	1	40	72.10	6.60	2.50	1.82	78	.787
	2	40	69..60	5.63				

Note: Level of significance is at $p < 0.05$

Table 2a illustrates the students' mean scores for illustration of plants prior to intervention. The mean score of the Experimental Group was 72.10 while as for the Control Group the data was 69.60. The results from the independent-samples t-test show that there was no significant difference between the experimental as well as the control groups in their mean scores for illustration performance before the intervention (Mean difference=2.50, $t = 1.82$, $df = 78$, $p = .787$).

Table-2b

Comparison of the Experimental Group (using scaffolding strategies) compared with the Control Group (using the conventional method) in their mean score for curve, regular lines, and irregular lines in illustration of plants in the post-test?

	Group	N	Mean	Std. Deviation	Mean Different	t-value	df	p-value
Plants	1	40	87.85	4.39	17.6	14.17	78	.006
	2	40	70.25	6.51				

Note: Level of significance is at $p < 0.05$

Table 2b shows that the total score of the experimental group (Mean=87.85, SD=4.39) was higher than that of the control group (Mean=70.25, SD=6.51). The independent sample t-test results showed that the overall results of Curve, Regular Lines, and Irregular Lines in the

illustration of plants in the experimental group were significantly higher than those in the control group (t -value=14.17, df =78 p =0.006). Therefore, the research results answer the research question2. These findings are consistent with the findings of Gao Rongsheng (2015), which emphasizes that Curves, Regular Lines, and Irregular Lines can more effectively display the structure of plants in the representation of objects.

RQ3: Is there a significant difference between the Experimental Group (using scaffolding strategies) compared the Control Group (using the conventional method) in their mean score for the Force And Movement Of The Lines And The Dynamic in the illustration of animals?

Hypothesis 3: There is no significant difference between the Experimental Group (using scaffolding strategies) and the Control Group (using the conventional method) in their mean score for Force And Movement Of The Lines And The Dynamic in the illustration of animals.

Table-3a

Comparison of the Experimental Group (using scaffolding strategies) compared with the Control Group (using the conventional method) in their mean score for Force and movement of the lines and the dynamic in illustration of animals of pre-test?

	Group	N	Mean	Std. Deviation	Mean Different	t-value	df	p-value
Animals	1	40	71.50	6.73	2.55	1.88	78	.613
	2	40	68.95	5.32				

Note: Level of significance is at $p < 0.05$

Table-3a indicates the students' mean scores for illustration of animals prior to intervention. The mean score of the Experimental Group was 71.50. On the other hand, the data for the Control Group was 68.95. The results from the Independent-samples t-test show that there was no significant difference between the mean scores of students of the experimental as well as control groups for their performance in illustration of animals before the intervention (Mean difference= 2.55, $t = 1.88$, $df = 78$, $p = .613$).

Table-3b

Comparison of the Experimental Group (using scaffolding strategies) compared with the Control Group (using the conventional method) in their mean score for Force and movement of the lines and the dynamic in illustration of animals of post-test?

	Group	N	Mean	Std. Deviation	Mean Different	t-value	df	p-value
Animals	1	40	87.55	4.90	18.85	14.81	78	.0085
	2	40	68.70	6.38				

Note: Level of significance is at $p < 0.05$

The total score of the experimental group (Mean=87.55, SD=4.90) was higher than that of the control group (Mean=68.7, SD=6.38). The independent sample t-test results showed that the overall performance of the experimental group for the Force and Movement of the Lines and

the Dynamic in illustration of animals was significantly higher than that of the control group (t -value=14.81, df =78, p =0.085). Therefore, the research results answer research question 3. These findings are consistent with the findings of Fang and Gao Rongsheng (2015), which emphasized that Force And Movement Of The Lines And The Dynamic can more effectively display the overall shape of animals in the process of representation of objects (Animals).

5.0 DISSCUSSION

The findings in Table 1b are consistent with those of Zhang and Ma (2002); John (2015) and Candy et al. (2012) emphasize that scaffolding methods can help improve students' illustration performance because students can Better show your control over the screen. The findings in Table 2b are similar to those of Brenda and Beverly (2011), which suggest that when students are immersed in a scaffolding environment, they perform better than students taught using traditional strategies. In addition, the students in the experimental group showed a higher level of illustration performance because they were in specific illustration representation forms (curve, regular lines and irregular lines). The findings in Table 3b are supported by Kathleen (2019); Zhang (2018) and Jiang (2020) show that students studying under the scaffolding approach not only make great progress in illustration performance, but also in aesthetic cognition and creativity. Satisfied because students understand the cultural aspects and are therefore more motivated and engaged in the classroom.

In conclusion, the data showed that the scaffolding method significantly improved students' illustration expressiveness, aesthetics, and creativity. This mode combines Building, Plants, Animals and Clouds with Straight lines, Short lines, Curve, regular lines, irregular lines, force and movement and the dynamic, more concrete and real. At the same time, the students' vision has been broadened, and their cognition of the subject and the control of painting skills have been greatly improved. As a result, their cognitive level has been significantly improved, and their illustration performance ability has been improved. Overall, students' motivation to learn and mastery of illustration presentation skills have been greatly improved.

6.0 CONCLUSION

The quantitative data results of this study show that through the use of the scaffolding method, the illustration students are using First, Straight Lines, And Short Lines in the illustration of Building. Second, Curve, Regular Lines, And Irregular Lines in illustration of plants. Third, Force And Movement Of The Lines And The Dynamic in illustration of animals. The level of illustrations in other aspects is significantly higher than that of students who have passed the conventional method.

In terms of theoretical significance, the research results show that students understand the Straight Lines, Short Lines, Curve, Regular Lines, Irregular Lines, Force And Movement Of The Lines, The Dynamic, The Role Of Lines In Expressing 3D Space, Point, And Line Combination. These findings are consistent with the method used in illustration teaching proposed by Gao (2013). He also emphasized different forms of illustration representations of the same theme (black and white painting: the black and white shape is equal to object pictogram, black and white shape is not equal to object pictogram).

In addition, these research results also have intense teaching enlightenment and significance for art teachers (especially illustration) in Chinese universities. The research results show that art illustration teachers should adopt appropriate teaching methods to help students deepen and understand illustrations in practical operations to the maximum extent. Teachers should also take effective methods to improve students' illustration creativity and illustration thinking.

It is also important to note that this study has limitations.

The total number of students selected in the experimental group is too small (only 80 students. As such, the sample size is a limitation in this study). Therefore, the sample size is the limitation of this study, which can easily lead to the deviation between the learning effect and the experimental results.

In the experimental process of this subject, only scaffolding teaching mode is used, which becomes the limitation of this subject. Only one research method was used, and no more choices were made, which hindered other topics.

In the process of learning illustration, students only begin to study illustration systematically in the second year. When students first enter school, they will only do some simple elementary learning.

All the teachers who experiment on this topic have experience of illustration teaching, but what we do not know is that there are differences in the professional level of the teachers in lectures.

Although these limitations exist, researchers will overcome these problems through customer service in the subsequent research process and strive to provide particular support and contributions to future illustration education work.

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