

## A Comparative Study on the Effectiveness of Cooperative Learning Method (STAD) against Traditional Methods in Landscape Painting

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### Abstract

This study aimed to evaluate the use of cooperative learning method, Student Teams-Achievement Divisions-DAL (STAD), as compared to traditional learning methods in landscape painting among form four Muar High School students. A total of 35 students from two classes of Grade 4 were involved in the study. 15 students of 4 Jauhari were assigned as the control group while 15 students from 4 Smart became the experimental group. The experimental group was treated with STAD model approach while the control group was not given any treatment but to follow the process of teaching as usual. (This quasi-experimental study was used to evaluate the effectiveness of cooperative learning method (STAD) than traditional methods. Student achievement was measured based on the pre-test and post-test). The results obtained from this study indicated that the STAD cooperative method was more effective than the traditional methods of landscape painting colouring skills. Through this study, the comparison clearly showed that there was an improvement in the colouring method in painting landscapes after undergoing the cooperative learning method (STAD) as compared to students following traditional methods. From the findings of this study, I would recommend STAD cooperative learning as one of the appropriate methods and practices in painting learning for Visual Arts Education in schools.

### Introduction

There are many effective theories on visual arts education. Teaching excellence involves teacher behaviour, knowledge advancement, and several variables that influence the process of teaching and learning. Teaching quality is essential for any art teachers to evaluate their teaching effectiveness during teaching and learning sessions (Borich & Faenton, 1977). Various teaching approaches and strategies have been manipulated so that students are able to enjoy better and meaningful learning experience. Any art education teachers will definitely possess consistency in the quality of personality. Having vast knowledge in philosophies and

theories is pertinent as this may help any teachers to frame a more solid and effective teaching. Such knowledge may also come in handy to the teachers by enabling them to compare and choose a suitable theory to be applied in the teaching and learning sessions. Some opined that arts can work as an agent of change in a society. Any improvements and changes taking place are the results of mutual relationships and benefits.

According to Effandi (1998), cooperative learning is a teaching and learning strategy by which the students collaborate with each other in small-sized groups that share mutual aims. Grouping for cooperative learning normally consists of four to six members. Group members would usually remain unchanged for a certain duration, for instance, for several weeks (Sharan and Sharan,1992). Cooperative method takes into account students’ cognitive, behavioural, emotional, and social aspects.

Kagan and Olsen (1982) take the position that cooperative learning is a structured group learning activity in which learning is in the form of group and that learning depends on information transfer through social exchanges among members. Fundamentally, cooperative learning involves helping each other in attaining each learning objective (Johnson & Johnson, 1991).

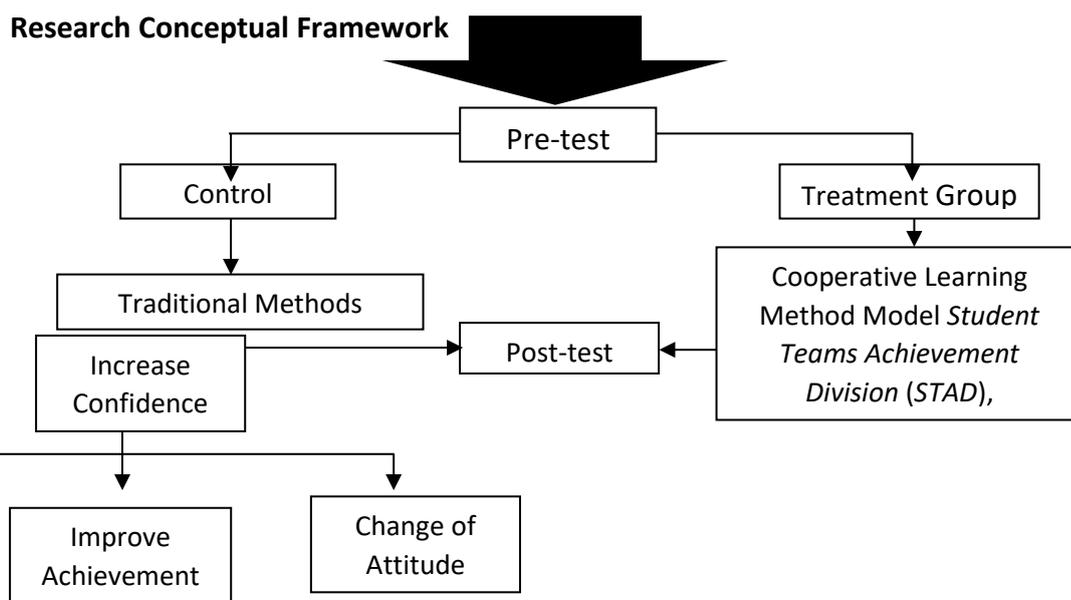


Figure 1.1 The Conceptual Framework on the Effectiveness of Cooperative Learning Method STAD and Traditional Methods

**PROBLEM STATEMENT**

In strategic management, schools are responsible institutions in producing students who are competent, excellent, creative, and innovative. Henceforth, teaching and learning process is vital as a medium to achieve such goals in delivering skilfull and knowledgable students in line with the Malaysian Ministry of Education missions. Among these, cooperative learning or assisted group learning is included. As stated by Iberahim (2000), the first element

in curriculum development are students. Teachers should play their role as the drivers or implementers of teaching contents. With the various existing strategies that can be employed to increase the effectiveness of teaching and learning, systematic and creative planning can determine the effectiveness of student learning.

Traditional methods are one of the methodologies that places teachers as the dominant figures in classroom activities which unfortunately limits the students' capabilities to expand on their learning skills. This is due to the years of practising teacher-centred approach by which teachers are the source of information. Many existing problems that have been identified are the results of such traditional learning methods. Teaching delivery solely based on textbook usage and 'chalk and talk' technique is the least favoured among the students as such approaches do not revolve around the students and student involvement is minimal (Mohd Arif, Rosnaini and Raja Maznah, 2004). Davis and Sorell (1995) state that schools should have long accepted the fact that traditional teaching and learning methods failed to work for most students. However, it is not easy to revolutionise teaching methodologies in schools. When studied, one of the actual factors that has been recognised is the students' disinterest in the teaching itself. This is because, students have to pay attention to the teaching which does not involve their active participation in the process of learning. This can be seen happening in less important subjects such as visual arts education.

Previous research revealed the weaknesses in traditional learning techniques. A study done by Burton (1987) clearly shows that students can learn more in contrast to *chalk and talk* methodology. Aside from improvement in the aspects of social and intellectual development, the levels of student understanding and academic achievement have successfully demonstrated improvement and students' preference for *STAD* cooperative learning method.

Cooperative learning has long been introduced in schools but student involvement is still not prominent in comparison to other learning methods. To tackle this problem, other alternatives must be adopted to increase the level of student involvement and reduce teacher-centredness in the teaching and learning process. Past studies show that student interaction, as the main criteria in cooperative learning, is able to improve student achievement (Newmann and Thompson, 1987). Cooperative learning is deemed the best alternative to be used based on previous research and experience by educational experts as an effective framework for learning in any academic discipline (Abdul Kadir, 2002).

Several existing problems among students have been identified regarding their learning of landscape painting. Lack of interest is found to be the main problem. Their perception of landscape painting has always been that it is something difficult. The way of teaching is also the main cause, in which the teachers only teach by instructing the students to complete their work. This problem needs to be addressed by the teachers themselves. Many research that have been done point out the advantages and strengths of cooperative learning method contrary to traditional methods. For that matter, the present researcher took an initiative by carrying out an investigation to evaluate the extent of cooperative learning method effectiveness in comparison to traditional methods through landscape painting.

### **Research Objectives**

The main objective of carrying out this study is to seek the extent of *STAD* cooperative learning method in facilitating skill improvement and student achievement in producing landscape painting of natural environment in comparison to traditional methods. Overall, the research objectives are;

- i. To identify the levels of student achievement in control group and experimental group from the pre-test and post-test of landscape painting.
- ii. To determine how *STAD* cooperative method contributes to improving student academic achievement in post-test.

### **Research Questions**

- i. Is there any significant differences in the levels of student achievement between control group and experimental group in pre-test and post-test of landscape painting?
- ii. Does the *STAD* cooperative learning method contribute to the improvement of student academic achievement in post-test?

### **Significance of Study**

This study is hoped to contribute and be of benefit to the body of knowledge in educational field within the scope of teaching and learning. The findings of this study will indirectly encourage educators to be creative in applying various teaching and learning techniques. This will eventually attract the students' interest towards the learning activities using the *STAD* cooperative approach besides improving students' academic achievement.

### **Limitations of Study**

This study involved 35 samples from Muar High School, i.e., 15 students of 4 Jauhari and 15 students of 4 Cerdas. 15 students from the class of 4 Jauhari became the control group and 15 students from 4 Cerdas became the experimental group. In carrying out this research study, teachers performed teacher-centred and student-centred teaching methodologies. The researcher's main reason was to form two groups, which were control group and experimental group, to seek and evaluate the effectiveness of *STAD* cooperative method in comparison to traditional methods.

### **Literature Review**

As mentioned by Mok Soon Sang (2005), within the educational context, cooperative teaching-learning carries the meaning of student group learning activity, with teacher facilitation, through discussions or contributions of individual skills with the aim to solve problems or conduct any assigned projects.

Learning methods are ways of learning based on individual inclination, the process of acquiring information and knowledge, skill mastery as well as development of attitude and trust (Ahmad, 2006). Learning in group too is meant to provide students with opportunities in experiencing learning process in accordance to their individual capability and inclination as well as work according to their ability and at their own pace.

Cooperative learning refers to generic teaching whereby the students from various achievement levels (for example, high, average, and low) cooperate as a heterogenuos group to solve problems, to complete asignments, or to attain the group targets (Kagan, 1994;

Slavin, 1983). Cooperative learning is one of the approaches that promotes interaction within a group. This occurs through exchange of information and ideas, knowledge sharing as well as elaboration of information and increase level of understanding among group members. Weak students will learn something from the high-achievers whereas the high-achievers will learn a new strategy from their experience of teaching and facilitating the weak students ( Marohaini Yusuf, 1989).

Nor Hasliza (2012) mentions that cooperative learning is one the effective learning strategies by which through this method, students from multiple levels of capability, skills and thinking, learn together in a group.

In sum, as argued by Slavin (2006), since Cooperative Learning Method emphasises on social interaction among peers, it brings about positive impact on student achievement, the change in relationship among members, and openness towards the lessons. Most research have shown better achievement and positive cooperative learning method compared to traditional methods.

### **Methodology**

#### **Research Design**

The quasi-experimental research design was carried out on an experimental group and control group in any available classes. This study involved 32 students, i.e., 15 from 4 Cerdas and 17 others from 4 Jauhari. 15 from the class of 4 Jauhari was the control group whereas the 17 students from the class of 4 Cerdas became the experimental group.

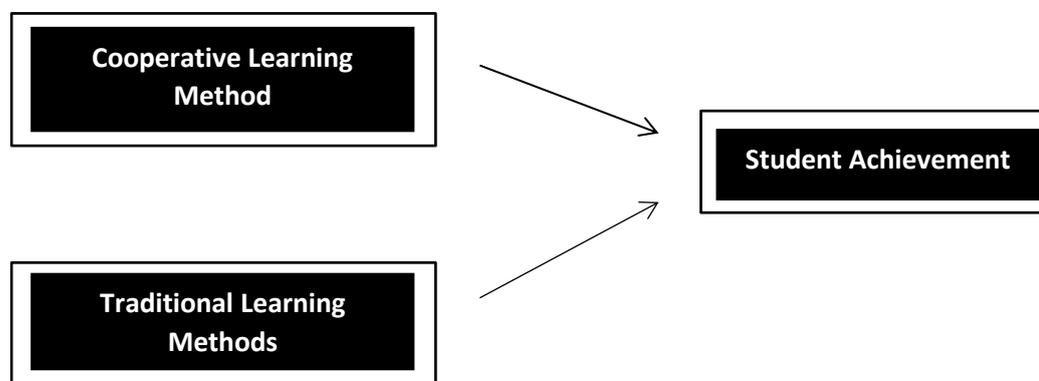


Figure 3.1: Research Design

#### **Control Group**

Control group was the group with several main criteria of information delivery, factual or conceptual clarification, and one-way communication in teacher-centredness where the students acted as recipients.

#### **Experimental Group**

The experimental group was taught by the same researcher, shared similar objectives but using cooperative method with the criteria of 4 to 5 members in a small group. A leader was appointed for each small group to shoulder the role as peer counselor. Slavin (1995) claims

that *STAD* Cooperative Method is an approach that can motivate students to help one another in acquiring skills put forth by the teachers.

### Research Instruments

The instruments used in conducting the pre-test and post-test were in the form of practicality whereby the students of experimental and control group produced landscape paintings according to sets and finally they sat for the post-test. In addition, several details such as education level, parents' occupation, and race were recorded. This instrument was used to measure the effectiveness of *STAD* cooperative learning model and traditional methods.

### Research Procedures

This study involved 30 students, i.e., 15 of 4 Cerdas students and 15 of 4 Jauhari students under the researcher's control. Both of these classes went through pre-test prior to and after they both underwent different teaching and learning processes. The 15 students from 4 Cerdas became the experimental group and followed the lessons using *STAD* cooperative method while those from the class of 4 Jauhari functioned as the control group which followed the lessons using traditional methods. The teaching and learning duration was four weeks when students learnt landscape painting techniques. In the beginning, both control and experimental groups were given pre-test before the research was conducted. At the final stage, both groups sat for the post-test to evaluate the effectiveness of the methodologies.

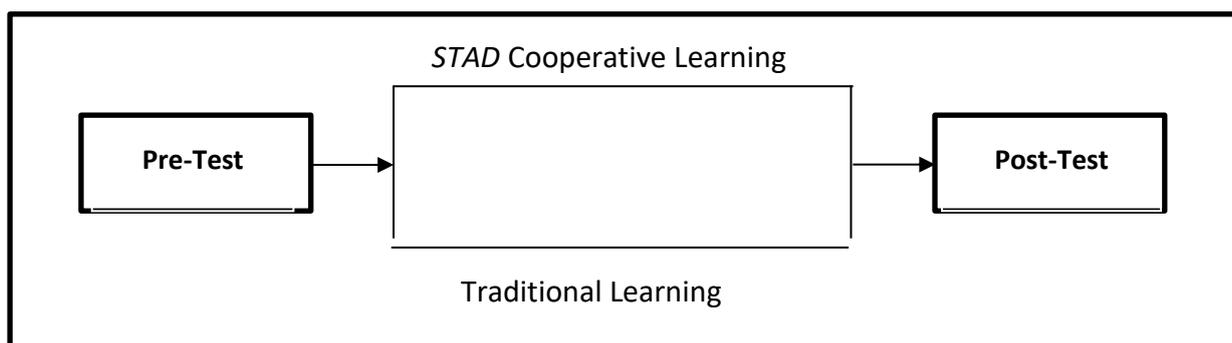


Figure 3.2: Learning Methods

In this study, the improvement in achievement was measured based on the difference in the pre-test and post-test scores. Any increase in the achievement of the experimental group was measured at the end of the test. The control group was taught traditionally via 'chalk and talk' while the researcher played the role of an instructor.

### Data Analysis

The collected data from the pre-test and post-test were processed to obtain the differences as a result of the two teaching methodologies, i.e., *STAD* cooperative method and traditional methods. They were also used to compare the minimum achievement scores between the control and the experimental groups. This study employed the design of controlled and experimental research via their own methodologies. The analysis was to measure the effectiveness of the *STAD* cooperative learning approach.

**Research Findings**

The analysis of data was done to examine the extent of effectiveness between *STAD* cooperative method and traditional methods. It was done following these several steps:-

- i) The difference between the results from the Pre-Test and Post-Test of Control Group and Experimental Group.
- ii) The comparison of increased scoring results of post-test between Control Group and Experimental Group.

Table 4.1

Comparison of Pre and Post Test Results of the Control Group

Num	Name	Marks		Marks		Improvement	%
		Pre-	Grade	Post-	Grade		
1	Sample 1	58	C+	59	C+	1	1.72
2	Sample 2	56	C+	59	C+	3	5.36
3	Sample 3	56	C+	59	C+	3	5.36
4	Sample 4	38	G	42	E	4	10.53
5	Sample 5	62	B	62	B	1	0.00
6	Sample 6	49	D	51	B	2	4.08
7	Sample 7	54	C	58	C+	4	7.41
8	Sample 8	57	C+	60	B	3	5.26
9	Sample 9	60	B	63	B	3	5.00
10	Sample 10	51	B	53	B	2	3.92
11	Sample 11	50	B	55	C+	5	10.00
12	Sample 12	52	B	56	C+	4	7.69
13	Sample 13	58	C+	62	B	4	6.90
14	Sample 14	61	B	62	B	1	1.64
15	Sample 15	53	B	55	C+	2	3.77

Table 4.2

Comparison of Pre-Test and Post-Test Results of the Experimental Group

Num	Name	Marks		Marks		Improvement	%
		Pre-	Grade	Post-	Grade		
1	Sample 1	54	C	59	C+	5	9.26
2	Sample 2	60	B	66	B+	6	10.00
3	Sample 3	59	C+	66	B+	7	11.86
4	Sample 4	46	D	54	C	8	17.39
5	Sample 5	45	D	60	B	15	33.33
6	Sample 6	54	C	64	B	10	18.52
7	Sample 7	58	C+	69	B+	11	18.97
8	Sample 8	59	C+	68	B+	9	15.25
9	Sample 9	61	B	70	A-	9	14.75
10	Sample 10	57	C+	69	B+	12	21.05
11	Sample 11	54	C	63	B	9	16.67
12	Sample 12	56	C+	65	B+	9	16.07
13	Sample 13	41	E	58	C+	17	41.46
14	Sample 14	52	C	62	B	10	19.23

### Summary

Overall, the researchers found an increase in tangible results from group classes in the treatment group compared to the control classes. These results can be viewed on the basis of data obtained as soon as the pre-test results is carried out.

In conclusion, the main purpose of this study is to see and assess the extent of the increase in achievement motivation and achievement level of students studying painting nature in the Visual Arts through STAD cooperative method compared to traditional methods ..

Through this study actually had one major implications for the development of our country's education system is on track 21st century. STAD cooperative method is to press and focuses on student involvement than usual teacher-centered methods.

In conclusion STAD cooperative learning through this method is the only method that is particularly interesting in accordance with the current situation today compared to traditional methods. In addition, the STAD Cooperative Method itself has a lot of advantages to students and indirectly improve school performance.

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### References

- Mok, S.S (2005). *Ilmu Pendidikan untuk KPLI (Sekolah Rendah): Komponan 1 & 2. Psikologi Pendidikan dan Pedagogi*. Kuala Lumpur: Kumpulan Budiman Sdn. Bhd.
- Slavin, R. E. 1983. *Cooperative Learning*. New York: Longman.
- Kagan, S. 1994. *Cooperative Learning*. San Clemente, CA: Kagan Publishing.
- Slavin, R. E. (1995). *Cooperative Learning*. Needhem Height, MA: Allyn & Bacon.
- Slavin, R.E. (2006). *Educational Psychology: Theory and Practice*. (8th Ed.) Boston: Allyn and Bacon.
- Yusoff, M (1989). *Strategi Pengajaran Bacaan dan Kefahaman*. Petaling Jaya: Percetakan Kum Sdn Bhd.
- Mohamed, N. (2012). *Penglibatan pelajar dalam pembelajaran koperatif di sekolah menengah vokasional*. Masters thesis, Universiti Tun Hussein Onn Malaysia.
- Ahmad, A., et al.(2002). *Pembelajaran Koperatif Yang Berkesan*. Dicapai pada Mac 4, 2008,
- Ahriani, F. *Sekolah Menengah Kejuruan Negeri (SMKN)2 Bantaeng Kabupaten Bantaeng Sulawesi Selatan* - jurnal
- Johnson, D. W., & Johnson, F. (1991). *Joining Together: Group Theory and Group Skills (4 thEd.)* Englewood Cliffs, NJ: Prentice Hall. Johnson
- Newmann F.M & Thompson, (1987). *Effects Of Cooperative Learning On Achievement In Secondary Schools*. A summary of research.
- Sharan, S. (1980). *Cooperative Learning in Small Groups: Recent Methods and Effects on Achievement, Attitudes, and Ethnic Relations*. Review of Educational Research, 50 (2), 241-271
- Sharan, Shlomo. 2009. *Hand book of Cooperatif Learning*. Imperium. Yogyakarta.

- Kagan, S. (1992, 1994). *Cooperative Learning*. San Juan Capistrano, CA: Kagan Cooperative Learning.
- Zakaria. E (2005). *Asas Pembelajaran Koperatif dalam Matematik*. Selangor: Karisma Publication Sdn Bhd.
- Kagan, S (1992). *"Cooperiltive Learning Resources For Teachers"*. Riverside. CA: University of California at Riverside
- Hassan.I, (2000). *Pendidikan Seni : Suatu Pemikiran Semula dalam Kumpulan Esei Pilihan Pendidikan Seni dan Muzik*. Universiti Pendidikan Sultan Idris : Tanjong Malim.
- Raja Hussain . R.M (1990). *Masalah Pendidikan. Jilid 14 April 1990. Kepentingan Analisis Keperluan Dalam Penghasilan Bahan Pengajaran dan Pembelajaran*. Fakulti Pendidikan Universiti Malaya. Kuala Lumpur.
- Ahmad, S. (2006). *Kemahiran Belajar Berkesan*. Kuala Lumpur: Utusan Publication and Distributor.
- Borich, G. (1996). *Effecting Teaching Methods*. 3rd ed. New Jersey: Prentice Hall
- Slavin, R. E. (1995). *Cooperative learning: Theory, research and practice*. 2nd ed Boston: