

# **A Comparison of Learning Achievement and Attitude Towards the 20204-2102 Word Processor Course Among First-Year Vocational Certificate Students Using the Student Teams-Achievement Division (STAD) and Lecture Method**

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Received 17 January 2025; revised 23 February 2025; accepted 24 February 2025

## **Abstract**

A comparison of learning achievement and attitude towards 20204-2102 word processor course among first-year vocational certificate students using Student Team Achievement Division (STAD) and lecture method study aimed to 1) To enhance the learning achievement of vocational certificate (Por Wor Chor) students in the Word Processing course (Course Code: 20204-2102) by utilizing the Student Team Achievement Division (STAD) cooperative learning method and comparing it with the lecture-based learning approach. 2) To examine the differences in learning achievement before and after instruction among students taught using the STAD cooperative learning method and the lecture-based approach in order to assess the effectiveness of each learning model before and after learning by using lecture method. The correspondents were 44 Business Computer

students in their first year of vocational certificate in the Vocational Education program and were selected with purposive sampling which were divided into 2 groups: experimental group and control group. There were 3 research tools in this study: lesson plans of the method of Student Teams Achievement Divisions (STAD) and lecture method, pre-test and post-test, and achievement test. The statistic for data analysis was the average ( $\bar{X}$ ), the standard deviation (S.D.), the percentage, and t-test. The results of this study indicated that students' learning achievement in the 20204-2102 Word Processor course was significantly higher after using the Student Team Achievement Division (STAD) method compared to those taught using the lecture method, at a significance level of .05.

**Keyword:** Achievement, Word Processor, Student Team Achievement Division (STAD)

## Introduction

Computers play a crucial role in human development, particularly in the pursuit of knowledge. The structure of Information and Communication Technology (ICT) is a key factor for success in the Thailand 4.0 era, which requires collaboration across various sectors to drive the country towards its developmental goals. Policies focusing on long-term national development serve as the foundation for achieving stability and sustainability, aligning with the government's vision. This approach simultaneously promotes reforms in economic structures, research and development, and education. The “Pracharat” framework fosters collaboration between public and private sectors to enhance education systems and quality of life in contemporary society.

The widespread adoption of computers in education has become increasingly important, and the Word Processing course is a subject that warrants significant attention. This course emphasizes the principles and practices of document design in business, including the use of color, typography, and graphics for creating materials for corporate advertisements and government documents. These practices align with the 2017 Digital Economy and Society Act, Section 6, which outlines national policies and plans for promoting digital standards in line with the 2019 Vocational Certificate Curriculum and the 2010 National Education Act, Section 22. These guidelines emphasize that education should enable all students to develop their potential, highlighting the importance of student-centered learning where teachers create supportive learning environments and encourage students to construct their own knowledge.

There are various forms of cooperative learning, and the researcher identified the Student Teams Achievement Divisions (STAD) model as particularly effective in fostering student learning development. This approach involves grouping students with varying academic abilities and genders. Teachers begin lessons by presenting the material and assigning team-based tasks. Once students have gained a comprehensive understanding of the lesson, individual quizzes are conducted without peer consultation. The scores are then compared with a baseline, averaged within the group, and the best-performing groups receive certificates or rewards.

For this course, targeting vocational certificate students, teachers have designed assessments that focus on both knowledge and comprehension. Over the years, various instructional methods, including remedial teaching and peer-assisted learning, have been employed to

ensure students grasp the content and meet the passing criteria. Student satisfaction with teaching methods, including E-learning and traditional lectures, has been evaluated to refine instruction according to learners' preferences. However, challenges persist with these methods:

1. Remedial Teaching: Scheduling conflicts arise as students often have different free periods. A lack of enthusiasm for practical assignments diminishes engagement when tasks are reassigned.

2. Peer-Assisted Learning: Teachers manually group students, often leading to resistance due to the fixed group size of four, which limits flexibility.

3. E-Learning: Despite its accessibility, students showed only moderate satisfaction, whereas traditional lectures received higher satisfaction ratings.

4. Student Diversity: Variations in intelligence, personality, and prior knowledge—especially in institutions with inadequate computer facilities—create disparities in learning outcomes.

5. Limited Resources: Insufficient computer equipment restricts teaching effectiveness.

Based on the study of related research on cooperative learning, Nucharee Phuangfuang (2014) conducted research to develop and test the effectiveness of cooperative learning activities using the STAD technique on the topic "Entertainment" to enhance English listening skills for communication among Grade 11 students at Prachasongkroh Wittaya School, under the Secondary Educational Service Area Office 39, Nongkula Subdistrict, Bang Rakam District, Phitsanulok Province. The findings revealed that learning achievement after using the cooperative learning activities with

the STAD technique was significantly higher than before learning at the statistical significance level of .05. Similarly, Weerayut Kachentorn (2017) conducted a comparative study of academic achievement in the "Architectural Drawing with Computers" course (Course Code: 2106-2105) among vocational certificate students in the Construction Department at Samut Prakan Technical College. The study compared cooperative learning using the STAD technique with traditional learning methods and found that the learning achievement after the intervention was significantly higher than before learning, with statistical significance at the .05 level.

For this reason, the researcher became interested in employing the Student Teams Achievement Divisions (STAD) cooperative learning method to enhance academic achievement. This method organizes students with diverse intellectual abilities and learning capacities into small groups, fostering collaboration, shared ideas, and mutual reasoning. It also provides an opportunity for students to exchange experiences, understand emotions, and develop interpersonal awareness within the group, ultimately benefiting their professional lives. Emphasizing group success and shared benefits, the researcher is particularly interested in developing instructional materials for the Word Processing course (Course Code: 20204-2102) under the Vocational Certificate Curriculum in the Business Computer Program to improve students' learning outcomes.

## Research Objectives

The objectives of this research are as follows:

1. To enhance the learning achievement of vocational certificate (Por Wor Chor) students in the Word Processing course (Course Code: 20204-

2102) by utilizing the Student Team Achievement Division (STAD) cooperative learning method and comparing it with the lecture-based learning approach.

2. To examine the differences in learning achievement before and after instruction among students taught using the STAD cooperative learning method and the lecture-based approach in order to assess the effectiveness of each learning model before and after learning by using lecture method.

## **Research Scope**

### **1. Population and Sample**

1.1 The population consisted of first-year students enrolled in the Vocational Certificate Program in the Business Computer field, under the Commerce Department, at Phitsanulok Vocational College, Phitsanulok Province, during the first semester of the 2019 academic year. The total population included 96 students across four classrooms.

1.2 The sample for this research comprised 44 first-year vocational certificate students in the Business Computer Program, selected through purposive sampling and divided into two groups:

1.2.1 Experimental Group: 24 students from Classroom 2, taught using the STAD method.

1.2.2 Control Group: 20 students from Classroom 4, taught using the lecture-based method.

### **2. Variables**

2.1 Independent Variables:

2.1.1 The cooperative learning method using the Student Teams Achievement Divisions (STAD) technique.

2.1.2 The lecture-based teaching method.

2.2 Dependent Variable: Academic achievement in the Word Processing course.

### **3. Research Content**

This research utilized the content from the Word Processing course (Course Code: 20204-2102).

### **4. Experimental Duration**

The experiment was conducted during the first semester of the 2019 academic year.

## **Research Methodology**

This research, titled “A Comparison of Learning Achievement and Attitude towards 20204-2102 Word Processor Course among First-Year Vocational Certificate Students Using Student Team Achievement Division (STAD) and Lecture Method Study” was conducted following these steps:

### **1. Population and Sample**

#### **1.1 Population**

The population consisted of first-year vocational certificate students in the Commerce Program, specializing in Business Computer Studies, at Phitsanulok Vocational College, Mueang District, Phitsanulok Province. The total population included 96 students across four classrooms during the first semester of the 2019 academic year, with mixed-ability students in each class.

#### **1.2 Sample**

The sample consisted of 44 first-year vocational certificate students in the Business Computer Program during the first semester of the

2019 academic year. Purposive sampling was used to divide the sample into two groups:

The experimental group consisted of 24 students from Classroom 2, taught using the STAD cooperative learning method.

The control group consisted of 20 students from Classroom 4, taught using the lecture method.

## 2. Research Design

This study employed a quasi-experimental design, incorporating pre-tests and post-tests for both the control and experimental groups (Kanchana Watthayu, 2005, p. 65).

$X_1$ Pretest	T Treatment	$X_2$ Posttest
Experimental Group ( $X_{a1}$ )	Lecture-based learning	Experimental Group ( $X_{a2}$ )
Control Group ( $X_{b1}$ )	STAD cooperative learning method	Control Group ( $X_{b2}$ )

## 3. Experimental Instruments

The instruments used in this research were divided into two categories: experimental instruments and data collection instruments.

### 3.1 Experimental instruments included lesson

3.1.1 The experimental instruments included lesson plans designed for the Word Processing course (Course Code: 20204-2102). A total of seven lesson plans were created, covering the following content:

Lesson Plan Unit 1: Introduction to Word Processing Software

Lesson Plan Unit 2: Formatting Text and Inserting Objects



Lesson Plan Unit 3: Inserting Tables and Mathematical Equations

Lesson Plan Unit 4: Formatting Official Documents and Business Letters

Lesson Plan Unit 5: Creating Mail Merge Documents and Envelopes

Lesson Plan Unit 6 : Applying Microsoft Word for Document Design

Lesson Plan Unit 7: Printing Academic and Professional Documents

3.1.2 Components of the Lesson Plans

3.1.3 Lesson Plans for the Experimental Group

3.1.4 The lesson plans were developed following the principles of the STAD method.

3.1.5 Lesson Plans for the Control Group

3.1.6 Development of Lecture-Based Lesson Plans

3.2 Data Collection Instruments

The data collection instruments consisted of the following:

1. The pre-test was a multiple-choice test with four options per question. It covered seven units, comprising a total of 100 questions, with a maximum score of 70 points. The purpose of the pre-test was to evaluate students' knowledge before the learning sessions.

2. The post-test was also a multiple-choice test with four options per question, covering the same seven units. It consisted of 100 questions, with a total score of 70 points, and was designed to assess students' knowledge after the learning sessions.

3. The achievement test (practical test) consisted of three sets, each worth 30 points, with a total score of 90 points. The test was divided as follows:

3.1 Set 1: Units 1–3 focused on document formatting using Microsoft Word 2016, with a total of 30 points.

3.2 Set 2: Units 4–5 covered the creation of mail merge documents, with a total of 30 points.

3.3 Set 3: Units 6–7 involved designing notebook covers for Phitsanulok Vocational College, with a total of 30 points.

#### **4. Methods for Developing and Assessing the Quality of Tools**

The development of the tools used in this research was conducted as follows:

##### **4.1 Pre-Test and Post-Test**

##### **4.2 Achievement Test**

An achievement test was developed to measure the behavioral objectives of each unit, comprising a total of 7 learning units. The test was divided into 3 sets with a total of 90 points.

4.2.1 Units 1-3: Document formatting using Microsoft Word 2016, totaling 30 points.

4.2.2 Units 4-5: Creating mail merge documents, totaling 30 points.

4.2.3 Units 6-7: Designing notebook covers for Phitsanulok Vocational College, totaling 30 points.

#### **5. Data Collection**

The data collection for the research titled “A Comparison of Learning Achievement and Attitude towards 20204-2102 Word Processor

Course among First-Year Vocational Certificate Students Using Student Team Achievement Division (STAD) and Lecture Method Study” were conducted in the following steps.

5.1 The experiment was conducted during the first semester of the academic year 2019.

5.2 A pre-test was administered to the sample group to measure prior knowledge before starting each learning unit. The test was conducted before the instruction for each unit began, with a time allowance of 10-20 minutes. The test details are as follows:

Unit 1: 10 questions, total 10 points

Unit 2: 10 questions, total 10 points

Unit 3: 20 questions, total 10 points

Unit 4: 20 questions, total 10 points

Unit 5: 20 questions, total 10 points

Unit 6: 10 questions, total 10 points

Unit 7: 10 questions, total 10 points

Total: 100 questions, total 70 points

### 5.3. Conducting the Experiment with the Sample Groups

5.3.1 Experimental Group: Instruction was delivered according to the lesson plans using the STAD cooperative learning method.

5.3.2 Control Group: Instruction was delivered through lecture-based methods.

5.4 At the end of each learning unit, a post-test was administered, designed to be parallel to the pre-test. Students were given 10-20 minutes to complete the post-test.

5.5 Achievement tests were conducted in three sets covering content from all seven units. The achievement tests also included three sets of practical tests. Both sample groups used the same test sets.

5.6 The achievement test scores were graded and analyzed statistically to test the hypotheses.

## **6. Data Analysis**

6.1 Assessing the quality of the pre-test, post-test, and achievement tests.

6.2 Comparing the learning achievements of the two groups.

## **Research Results**

The results of the research are as follow:

1. Results of the development of learning achievement for the Word Processing Program course (Course Code 20204-2102) for first-year vocational certificate (Vocational Education) students in the Business Computer major at Phitsanulok Vocational College, using the STAD cooperative learning method, showed that Group 1 had an average score of 21.33 points, Group 2 had an average score of 24.17 points, Group 3 had an average score of 20.17 points, Group 4 had an average score of 19.92 points, Group 5 had an average score of 22.17 points, and Group 6 had an average score of 24.67 points. This indicates that all groups achieved average scores meeting the test criteria.

2. The results of the comparison of learning achievement for the Word Processing Program course (Course Code 20204-2102) for first-year vocational certificate (Vocational Education) students in the Business Computer major at Phitsanulok Vocational College, using the STAD

cooperative learning method and lecture-based learning, revealed that the STAD cooperative learning method resulted in higher learning achievement in 6 lessons, accounting for 85%.

3. The results of the comparison of pre-test and post-test scores for the Word Processing Program course (Course Code 20204-2102) for first-year vocational certificate (Vocational Education) students in the Business Computer major at Phitsanulok Vocational College, taught using the STAD cooperative learning method, showed that post-test scores were significantly higher than pre-test scores at a statistical significance level of .05.

4. The results of the comparison of pre-test and post-test scores for the Word Processing Program course (Course Code 20204-2102) for first-year vocational certificate (Vocational Education) students in the Business Computer major at Phitsanulok Vocational College, taught using the lecture-based method, showed that post-test scores were significantly higher than pre-test scores at a statistical significance level of .05.

## Discussion of Results

Based on the research results, the following points are discussed:

1. From the comparison of learning achievement in the Word Processing Program course (Course Code 20204-2102), using the STAD cooperative learning method and lecture-based learning, it was found that:

1.1 The learning achievement of students taught using the STAD cooperative learning method showed average post-test scores of 18.33 points in the first test, 22.04 points in the second test, and 26.54 points in the third test, out of a total of 30 points. Analysis of pre-test and post-test

scores indicated that post-test scores were significantly higher than pre-test scores at the .05 level of significance.

1.2 The learning achievement of students taught using lecture-based learning also showed that post-test scores were significantly higher than pre-test scores at the .05 level of significance.

These results align with the hypothesis, as lecture-based learning involves teacher demonstrations with minimal student engagement, which may result in lower interest and unclear observations of demonstrations (Tisana Kaemmani, 2010). In contrast, STAD cooperative learning promotes interaction, teamwork, and mutual assistance, ensuring group success by emphasizing shared responsibility for learning (Sombat Kanchanarukpong, 2002).

The researcher observed that students using STAD cooperative learning had fewer questions for the teacher, completed activities more accurately, and had fewer issues with assignments than those taught using lecture-based methods. This is because STAD provides advantages such as encouraging less interested students to engage in learning for their group's success. Additionally, high-performing students enhance their understanding by teaching weaker peers, resulting in better learning outcomes and skill development for the entire group.

This aligns with the results of Sukont Sinthapanon (2009), who stated that STAD cooperative learning activities involve group members studying the content presented by the teacher until they fully understand it. High-performing members in the group are required to guide and assist those who are less proficient. It also corresponds with the research of Chaiwat Sutthirat (2012), which found that groups are rewarded when they

achieve scores that meet the predetermined criteria. The success of the group depends on all members understanding the material. As a result, group members must help each other to ensure comprehension because, during assessments, each member must complete the test individually without assistance. The scores from these individual tests are then averaged to determine the group's overall score. This process ensures that all members have the opportunity to perform at their best and achieve equal success.

Furthermore, it is consistent with the research of Kulrapee Siwapornrak (2014), who conducted a comparative study of learning achievement in the Data Structures and Algorithms course (Course Code 3204-2006) with second-year vocational certificate students in the Business Computer program at Nakhon Ratchasima Vocational College. The study was conducted during the second semester of the 2013 academic year with a sample of 43 students. The results revealed that students taught using an integrated approach combined with STAD cooperative learning achieved higher post-test scores compared to their pre-test scores. This is consistent with the research of Weerayut Kachentorn (2017), who conducted a comparative study of learning achievement in the Computer-Aided Architectural Drawing course (Course Code 2106-2105) among second-year vocational certificate students in the Construction program at Samut Prakan Technical College. The study compared the use of STAD cooperative learning techniques with traditional learning methods. The results revealed that the learning achievement in post-tests of students taught using the STAD cooperative learning technique differed significantly from those taught using traditional methods, with statistical significance at the .05 level.

2. The research results indicate that there is a difference in learning achievement between the STAD cooperative learning method and the lecture-based learning method.

From the analysis of pre-test and post-test scores between the experimental group and the control group. Using the t-test, the analysis of pre-test scores showed that in 5 units, both groups had similar foundational knowledge. In 2 units, the experimental group had higher average scores than the control group. The analysis of post-test scores using the t-test revealed that for 1 unit, the experimental and control groups had similar average scores. However, for 6 units, the experimental group scored higher on average than the control group. This demonstrates that the learning achievement of students in the experimental group differed significantly from that of the control group. These findings align with the research of Weerayut Kachentorn (2017), which showed that students in the Computer-Aided Architectural Drawing course (Course Code 2106-2105) at Samut Prakan Technical College, taught using STAD cooperative learning techniques, achieved higher average post-test scores compared to the control group. Similarly, Polsak Saengpromsri (2015) found that fifth-year high school students at Phayakkhaphum Wittayakharn School, Mahasarakham Province, who were taught using STAD cooperative learning techniques, demonstrated higher learning achievement and advanced scientific process skills compared to students taught using traditional methods.

The analysis of learning achievement for students in the Business Computer program, specifically in the Word Processing Program course (Course Code 20204-2102) during the first semester of the 2019 academic



year, revealed significant differences in performance between the experimental group and the control group. Grades were categorized into eight levels: 4, 3.5, 3, 2.5, 2, 1.5, 1, and 0.

In the experimental group, consisting of 24 students, 21 students (87.50%) achieved a grade of 2 or higher. In contrast, the control group, comprising 20 students, had only 13 students (65.00%) who achieved a grade of 2 or higher. These results indicate that the STAD cooperative learning method was more effective in enhancing students' academic performance compared to lecture-based learning.

The STAD cooperative learning method emphasizes a student-centered approach. Teachers prepare comprehensive lessons, exercises, and assessments while fostering an engaging learning environment. Students are grouped into teams, often participating in the grouping process themselves, which encourages collaboration and shared responsibility. This approach enables students of varying abilities to learn the same content and methods effectively, ensuring all students can meet the required academic standards. The cooperative environment nurtures teamwork, mutual support, and unity among students. Teachers serve as guides, offering assistance, advice, and evaluation throughout the learning process.

In contrast, the lecture-based method lacks these collaborative elements. Without group activities or opportunities for mutual assistance, students miss out on the motivation and support that come from shared goals within a group. This difference highlights the significant advantages of the STAD cooperative learning method in promoting academic success and fostering a more interactive and engaging learning experience for students.

## Recommendations

The researcher has the following recommendations for applying the research results and conducting future studies:

### 1. Group Organization

Learning groups should be organized with the specific purpose of allowing more capable students to assist those with lower capabilities. This approach fosters sharing, promotes unity within the classroom, and ensures that all students can meet the required academic standards.

### 2. STAD Cooperative Learning Method

The STAD method not only enhances academic achievement but also encourages students to develop social skills, leadership abilities, and the habit of supporting their peers.

### 3. Student Participation in Grouping

Students should be given the opportunity to participate in organizing their learning groups. If the teacher assigns groups without input from the students, the groups may only remain intact for 2–3 sessions before students revert to sitting with their usual friends. When this happens, individual preparation for exams often takes precedence, which undermines the goals of STAD cooperative learning. Allowing students the freedom to form their own groups can better facilitate the intended objectives of the method.

The STAD cooperative learning method is particularly suitable for the Word Processing Program course (Course Code 20204-2102). It significantly improves learning outcomes, ensures students meet the academic

requirements of the course, and helps all students successfully complete their studies according to the curriculum.

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