

**AN ASSESSMENT ON THE PERFORMANCE OF BS IN INFORMATION  
TECHNOLOGY THIRD YEAR STUDENTS IN THE COURSE OBJECT – ORIENTED  
PROGRAMMING (JAVA PROGRAMMING) IN REFERENCE TO THEIR CLASS  
SCHEDULE**

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**ABSTRACT**

*Based on the researchers' observation, individuals function efficiently and effectively at different times of the day. And also, students' learning can have based on several factors such as instructors' mastery of the subject, students' interest to the subject, class schedule, and the attendance in class of both the students and instructor. In this research, the researchers focused on the effect of learning based on their class schedule. Specifically, the study aims to: (1) To determine if there is a difference between students scheduled in the morning, midday and afternoon session in terms of their performance in the subject Object Oriented Programming; (2) to help the faculty in-charge in creating schedule for IT professional subjects for the next academic year based on the students' performance; and (3) to document the findings and further analyze the performance of students between morning, midday and afternoon sessions. The participants in the study were students from the College of Computer Studies of Laguna State Polytechnic University – San Pablo City Campus taking up Bachelor of Science in Information Technology enrolled in the subject Object - Oriented Programming (107 students). The length of the study was done within two (2) semesters. In semester one (1), data was obtained from the instructors' class record consisting of the students' quizzes, recitation, project, attendance and final exam. Data gathered were from the records of the students having morning, midday and afternoon sessions. In semester two (2), assessment and analysis of the data gathered were conducted. An analysis of variance was used to test the significant difference in the general average among the three groups of respondents namely: morning, midday and afternoon session. The result revealed that there is significant difference among the means of the groups' general averages. Based on the research findings, the students with afternoon schedule performed better in class compared to those with midday and morning session. And the worst time of the day to learn programming is morning. One recommendation that can be suggested is to schedule the programming courses in the afternoon, so that the students and the instructors can get the most out of each other.*

**KEYWORDS:** *class schedule, object-oriented programming, learning factor, time, performance*

## INTRODUCTION

Most researchers have found time of the day does play a significant part in student achievement. Several studies have found out that students perform better during a particular time of the day. According to Millar, Styles and Wastell (1980), morning learning is associated with superior immediate recall when compared to learning in the afternoon.

Researches that was conducted in the United Kingdom determining whether college students performing at a preferred time of day would show better achievement in morning, intermediate or evening hours. Students who preferred morning schedule outperformed those who chose the intermediate and evening sessions in regard to scores and performance. However, scores for students preferring morning and intermediate time of the day were not significantly different.

In a study by Lynch (1981), he found out that the greatest influence on reduction of absenteeism resulted from matching the time preferences of students with their English course schedules. Absenteeism as cited in the introduction is one of the many factors that affect student performance. According to Johnston (2009), if time is viewed as a resource and can be influenced to support high quality instruction, preferred time of the day is much more likely to result in improved learning.

However, not all students performed best at one particular time. And also, schools like Laguna State Polytechnic University – San Pablo City Campus are not set up to match every student's preferred schedule. Thus, there is a need for this kind of research showing the best time for a particular subject to be scheduled with the best time for the active participation and learning of students.

Based on the researchers' previous research entitled "Does Time of the Day Affect the Learning of the Students?" that focuses on the performance of the BS in Information Technology Third Year students in the course Systems Analysis and Design in morning and afternoon schedule, the evaluators recommends to further the study by focusing on other IT Professional subjects to determine if the results found will also generate the same to other subjects.

Based on the researchers' observation, individuals function efficiently and effectively at different times of the day. And also, students' learning can based on several factors such as instructors' mastery of the subject, students' interest to the subject, class schedule, and the attendance in class of both the students and instructor. In this research, the researchers focused on the effect of learning based on their class schedule. The result of this research will be based on the final rating of the students in the subject at the end of the semester.

For the past years, class schedule in Laguna State Polytechnic University – San Pablo City Campus has a block class scheduling method. Instructors and students are selectively placed at a certain times of the day. In the College of Computer Studies, the course Object – Oriented Programming is scheduled for four (4) sections (3A, 3B, 3C and 3D) in three (3) sessions, morning, midday and afternoon. For the morning class, Bachelor of Science in Information Technology 3D is scheduled, while Bachelor of Science in Information Technology 3B and 3C was in the midday session, and Bachelor of Science in Information Technology 3A is scheduled in the afternoon. The study was conducted on First Semester Academic Year 2017-2018.

Object – oriented Programming (Java Programming) is one of the professional subjects in the program Bachelor of Science in Information Technology. It is designed for the students to present a general understanding of the Java programming language by solving programming exercises, present a

general insight in Java's standard libraries and able to explain larger programming exercises that can be solved in OOP and able to discuss different solution alternatives.

## OBJECTIVES OF THE STUDY

### GENERAL OBJECTIVE

The general objective of the study is to assess the performance of the students with different schedules, morning, midday and afternoon.

Specifically, the study aims to:

1. To determine if there is a difference between students scheduled in the morning, midday and afternoon session in terms of their performance in their laboratory class;
2. To help the faculty in-charge in creating schedule for IT professional subjects for the next academic year based on the students' performance;
3. To document the findings and further analyze the performance of students between morning, midday and afternoon sessions.

### METHODOLOGY

The participants in the study were students from the College of Computer Studies of Laguna State Polytechnic University – San Pablo City Campus taking up Bachelor of Science in Information Technology enrolled in the subject Object - Oriented Programming (Java Programming). The students are currently in their third year in the University.

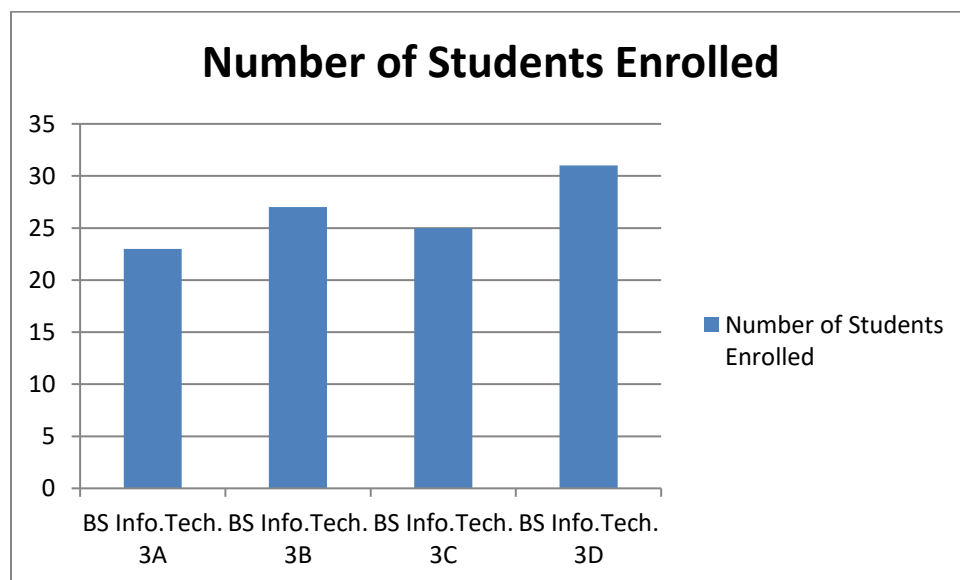


Figure 1. Students' Population

As seen in Figure 1, there were four (4) sections (3A, 3B, 3C and 3D) enrolled and each section comprised of twenty-three (23), twenty-seven (27), twenty-six (26) and thirty-one (31) students, respectively.

For this research, the researchers used the final rating generated from the quizzes, recitation, project, attendance and final exam of the students during the First Semester 2017-2018 in the subject Object – Oriented Programming (Java Programming). An analysis of variance was used to test the significant difference in the general average among the three groups of respondents namely: morning, midday and afternoon session. The result revealed that there is significant difference among the means of the groups' general averages. To determine which group/s performs better than the other, a multiple comparison test specifically, the Least Significant Difference (LSD).

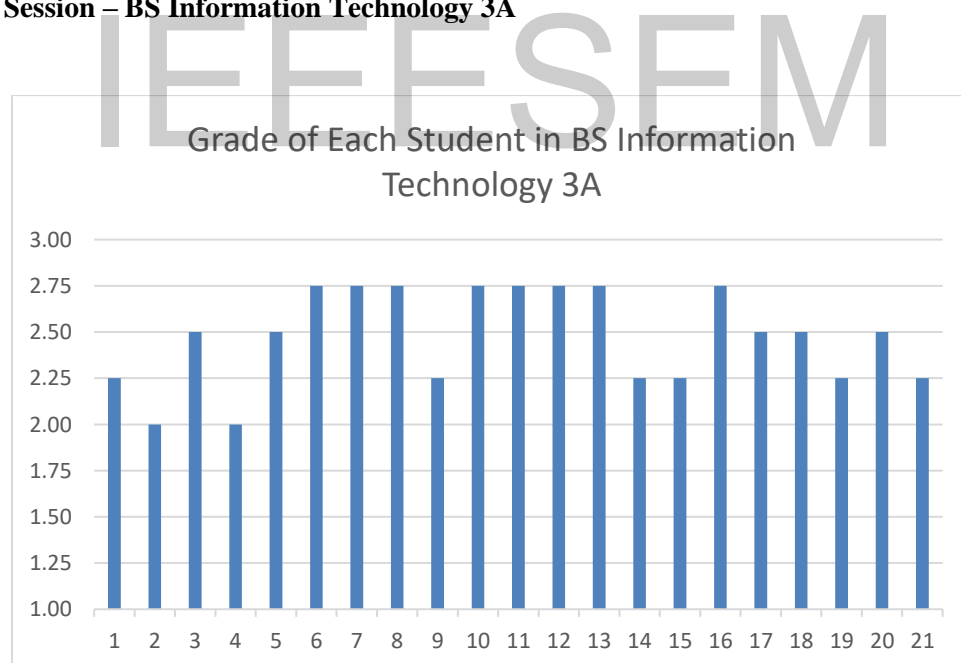
The length of the study was done within two (2) semesters. In semester one (1), data was obtained from the instructors' class record consisting of the students' quizzes, recitation, project, attendance and final exam. Data gathered were from the records of the students having morning, midday and afternoon sessions. In semester two (2), assessment and analysis of the data gathered were conducted.

## RESULTS

The purpose of this research is to determine how well the students performed in the subject OOP if their class is scheduled in morning, midday or afternoon.

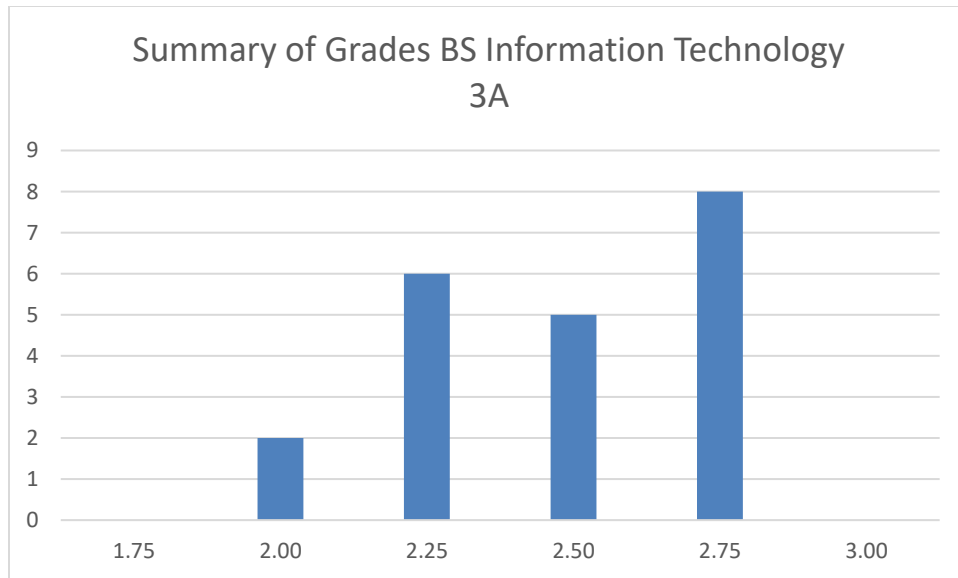
Next are the figures that describe the findings for each class having morning, midday and afternoon sessions.

### Afternoon Session – BS Information Technology 3A



**Figure 2.** BS Information Technology 3A Standing in OOP

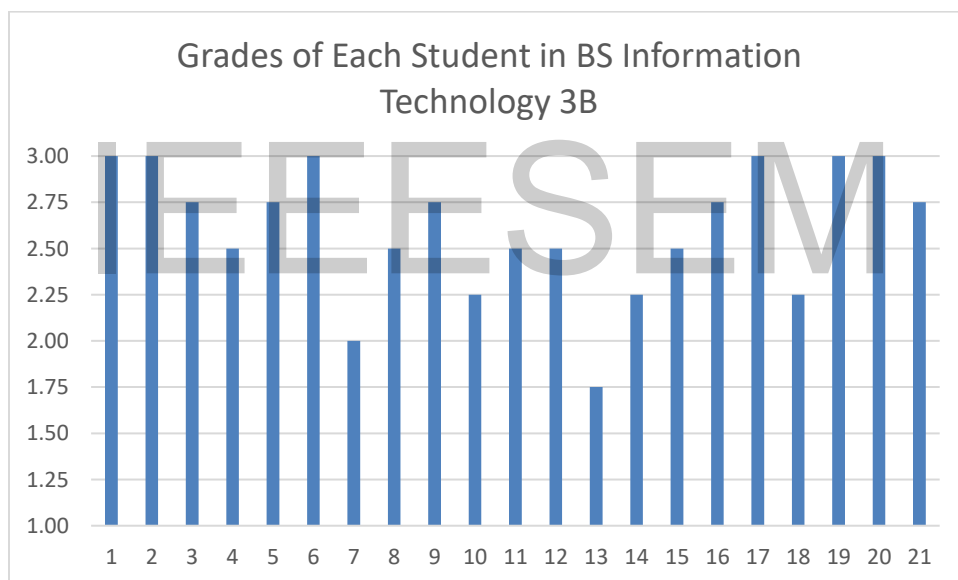
Figure 2 shows the grade of each student of BS Information Technology 3A that was scheduled during the afternoon.



**Figure 3.** Summary of Grades in OOP (BS Information Technology 3A)

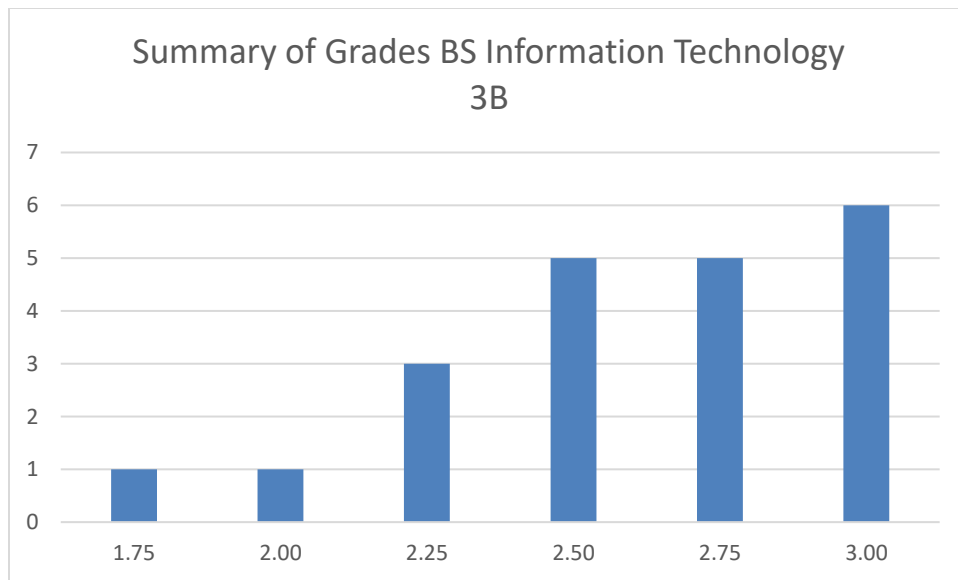
Figure 3 displays how many students of BS Information Technology 3A got the same grade.

### Midday Session – BS Information Technology 3B



**Figure 4.** BS Information Technology 3B Standing in OOP

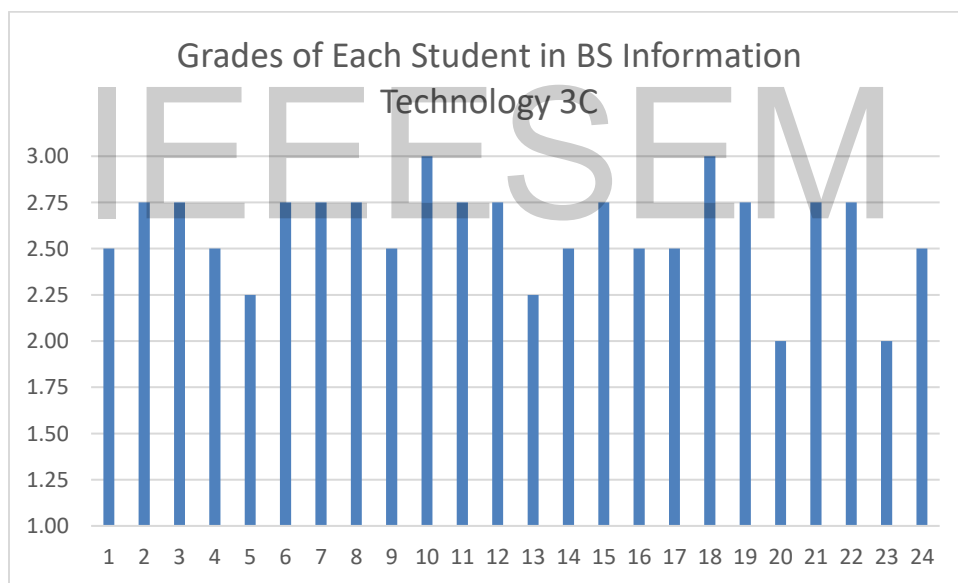
Figure 4 shows the rating of the students in BS Information Technology in the subject OOP. The BS Information Technology 3B had midday sessions.



**Figure 5.** Summary of Grades in OOP (BS Information Technology 3B)

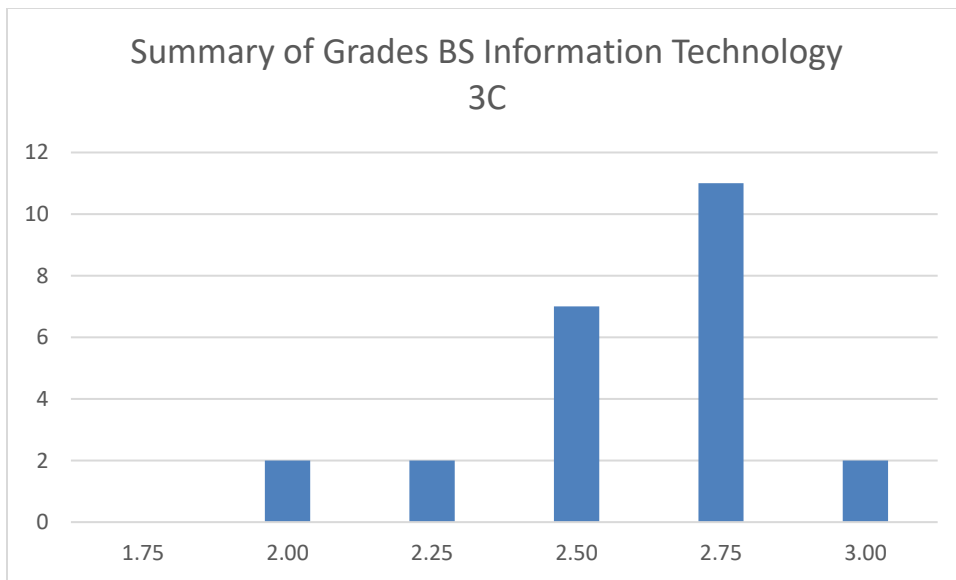
Figure 6 summarizes the grades of the BS Information Technology 3B students.

**Midday Session – BS Information Technology 3C**



**Figure 6.** BS Information Technology 3C Standing in OOP

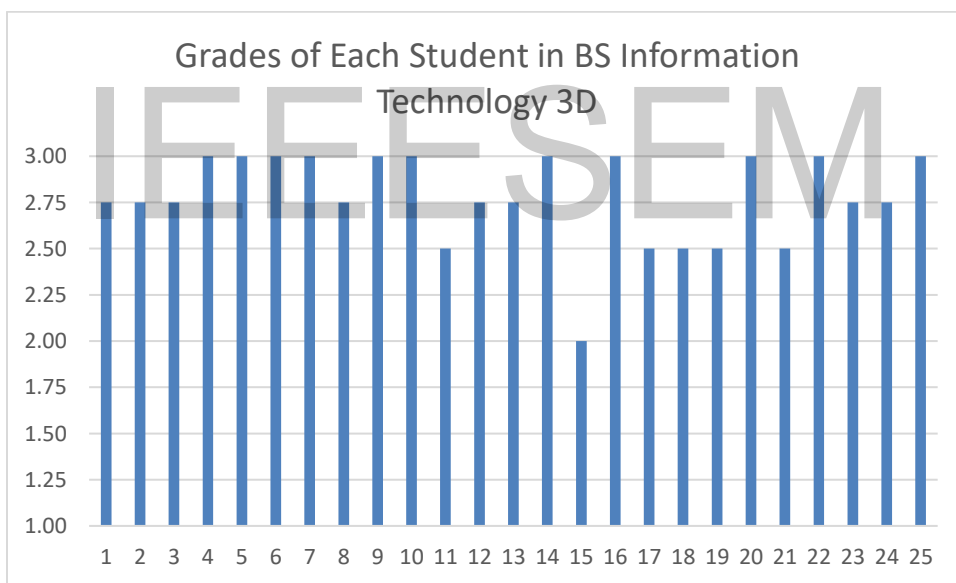
Figure 6 exhibit the marks of the students in BS Information 3C having a midday schedule in the subject OOP.



**Figure 7.** Summary of Grades in OOP (BS Information Technology 3C)

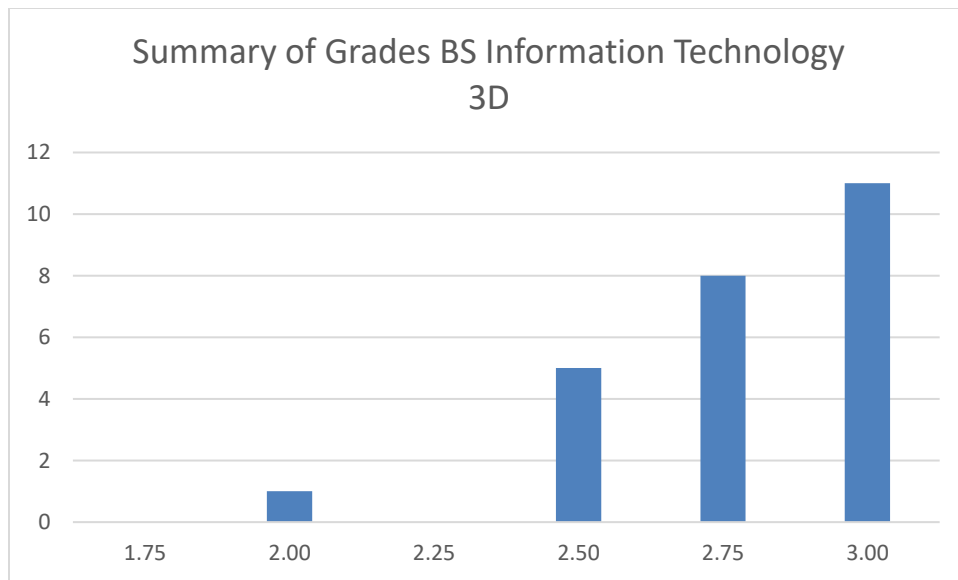
Figure 7 presents the summary of grades in OOP of BS Information Technology 3C.

### Morning Session – BS Information Technology 3D



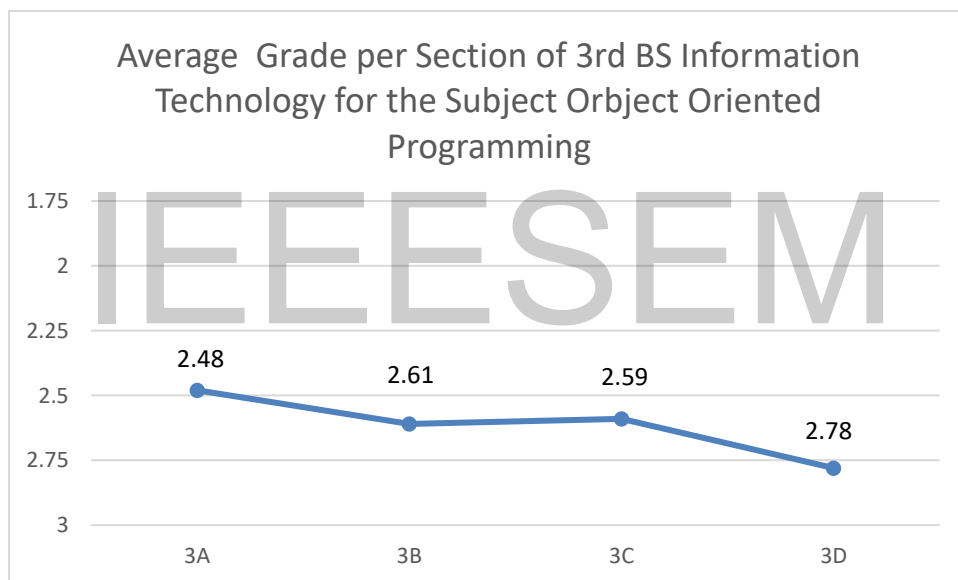
**Figure 8.** BS Information Technology 3D Standing in OOP

Figure 8 displays the grades of BS Information Technology 3D students that were attending their class in OOP in the morning.



**Figure 9.** Summary of Grades in OOP (BS Information Technology 3A)

Figure 9 shows the summary of the ratings of the BS Information Technology 3D in the subject OOP.



**Figure 10.** Average Grade per Section in OOP (BS Information Technology 3<sup>rd</sup> Year)

Figure 10 presents the average grade per section in OOP of the BS Information Technology. And based on the result, BS Information 3A average grade is better than the other sections.

**ANOVA**

Table 1. General Average

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	1.092	2	.546	6.790	.002
Within Groups	7.078	88	.080		
Total	8.170	90			

An analysis of variance was used to test the significant difference in the general average among the three groups of respondents namely: morning, midday and afternoon session. The result revealed that there is significant difference among the means of the groups' general averages. To determine which group/s performs better than the other, a multiple comparison test



specifically, the Least Significant Difference (LSD) was utilized (as shown in the table below. It can be seen that the students who belong to the morning schedule perform significantly different from those in the midday and afternoon sessions. This significance in the difference implies that students in the midday and afternoon schedules statistically perform better than students who hold classes in the morning. However, it is also shown that students in the midday and afternoon schedules performs statistically the same in terms of their general averages.

**Multiple Comparisons**

Table 2. Dependent Variable: General Average

	(I) session	(J) session	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
						Lower Bound	Upper Bound
LSD	Morning Session	Midday Session	.18000*	.07074	.013	.0394	.3206
		Afternoon Session	.30381*	.08395	.000	.1370	.4706
	Midday Session	Morning Session	-.18000*	.07074	.013	-.3206	-.0394
		Afternoon Session	.12381	.07495	.102	-.0251	.2728
	Afternoon Session	Morning Session	-.30381*	.08395	.000	-.4706	-.1370
		Midday Session	-.12381	.07495	.102	-.2728	.0251

\*. The mean difference is significant at the 0.05 level.

**FINDINGS**

The purpose of this research is to find out if there is an effect on the performance of the students if they are scheduled in the morning, midday or afternoon class in the subject Object Oriented Programming.

To answer the question, the researchers used an analysis of variance to test the significant difference in the general average among the three groups of respondents namely: morning, midday and afternoon session. Based on the research findings, the students with afternoon schedule performed better in class compared to those with midday and morning session. And the worst time of the day to learn programming is morning.

**CONCLUSIONS**

Regarding the objectives of the research, these are the conclusions made:

1. The researchers concluded that the students scheduled in the afternoon performed well compared to those students scheduled during morning and midday.
2. Based on the result of the research it can be said that the time of the day affect the learning of the students.

**RECOMMENDATION**

One recommendation that can be suggested is to schedule the programming courses in the afternoon, so that the students and the instructors can get the most out of each other.

## ACKNOWLEDGEMENT

This research paper is an action research to determine if there is a significant effect on the performance of the students depending on their class schedule. This can be of great help to consider in making class schedules.

The researchers would like to extend their sincerest thanks to the Third Year Bachelor of Science in Information Technology (AY 2017-2018) students who became part of this study. Also, to the Dean of the College and everyone who helped in this research paper.

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