

## RELATIONSHIP BETWEEN ATTITUDE AND PERFORMANCE IN “INTRODUCTION TO INFORMATION TECHNOLOGY” COURSE OF ENGINEERING STUDENTS

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### ABSTRACT

This study determined the attitudes of students toward the course in Information Technology (IT) considering the following variables: the subject itself, the instructor, the instructional materials and the learning environment which are being utilized to provide learning experiences that would enhance the development of students' capabilities towards IT. Engineering students have high level of attitude towards the Introduction to Information Technology course, the instructors, the instructional materials and the learning environment. The computer units in the Computer Laboratory of Engineering must be arranged and maintained appropriately because some of the computer units were not functioning properly and infected of virus. Purchasing of updated computer and Information technology related books must be prioritized by the library. Computer Journals and Magazines must be adequate enough for the research works of the students.

**KEYWORDS:** Attitude towards Computer, Engineering students, Information Technology, Instructional materials

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### Introduction

The continuous development of computerization has far reaching effects on society and it is best that every learner be made conscious of the effects of computer on the different aspects of life. The computer is no longer lock up to the region of scientific, military, big business or academic circles. The computer came to be an everyday tool of the ordinary educated person. Information Technology (IT) in its broadest sense encompasses all aspects of computing technology; and as an academic discipline it is concerned with issues related to advocating for users and meeting their needs within an organizational and societal context through the selection, creation, application, integration and administration of computing technologies (Lunt et al, 2008). All schools should be highly computerized, all teachers should be able to use the technology to enhance their working methods and all young people should be able to broaden their horizons (Fančovičová & Prokop, 2008).

That is why every individual should have a basic understanding of computer concepts and terminologies and should be able to do some tasks or programs on the computer. This knowledge will allow us to be at ease in an ever increasing computer adjusted environment by removing fear of the unknown that many people have about the computer. It will also allow us to be side by side of the new developments so that we could utilize new improvement for our own well-being and personal growth with the imperatives of technological development as a stepping stone

towards economic progress. Computer now occupies a prestige classification among all subjects in all levels of education.

The students are in the best position to comment on the effectiveness of any teaching system and they may be regarded as the best judges to assess the teaching and evaluation methods (Badyal, 2010; Majagi, et al, 2010).

Therefore, this study aimed to determine the attitudes of the engineering students toward the computer as the subject itself, the instructor, the instructional materials and the learning environment which are being utilized to provide learning experiences that would enhance the development of students' capabilities towards Information Technology. The researchers take into account the significant relationship in the students' attitudes and performance towards the aforementioned variables. This study is limited to students who are currently enrolled in Introduction to Information Technology at the College of Engineering of Lyceum of the Philippines University in Batangas City.

## **materials and methods**

The descriptive type of quantitative research method was utilized in the study. The respondents of the study were the 2<sup>nd</sup> Year Engineering students taking up Introduction to Information Technology Course at the Lyceum of the Philippines University in Batangas City, Philippines. The questionnaire – attitude scale was used as the research instrument in the study which was adopted from that of Tican (1996) which sought to determine the attitude of students towards the IT Course itself, the instructor, the instructors' methods of teaching, instructional materials and the learning environment. Weighted mean, rank and Pearson – Product Moment Correlation Coefficient were the statistical tools used to analyze and interpret the data gathered.

## **Results and Discussion**

Table 1 shows the obtained weighted mean on the level of students' attitude towards the subject.

The respondents were strongly agree that they find computer stimulating and challenging (WM = 4.77); they find lecture/hands-on as the most effective way to learn computer (WM = 4.69); they find computer relevant to their future career (WM =4.65); Computer makes significant contribution to mankind (WM = 4.65); and they like computer because it requires critical and logical thinking and deep analysis which most of their classmates can follow (WM = 4.55). Students are being challenged by the activities of the course because they find its true essence and application to real life situation and they really appreciate its usefulness. Teaching and learning strategies in education have been radically revised with the aim of providing better service to the learners through the intensive use of the ICT (Suri & Sharma, 2013).

**Table 1. Obtained Weighted Mean of the Level of Students' Attitude Towards the IT Course**

Attitude Towards the IT Course	WM	Verbal Interpretation	Rank
1. I like computer because it requires critical and logical thinking and deep analysis which most of my classmate can follow.	4.55	Strongly Agree	5
2. I consider computer necessary to society.	4.53	Strongly Agree	7.5
3. I find computer stimulating and challenging	4.77	Strongly Agree	1
4. I find computer relevant to my future career.	4.65	Strongly Agree	3.5
5. I feel that I am not ready for the computer subject I am taking now.	2.62	Moderately Agree	14
6. I find studying computer easier than any other subject.	4.00	Agree	11
7. I like the subject because the knowledge and skills derived can be applied in daily life.	4.41	Agree	10
8. For me, studying computer is not worth the time and efforts required.	3.18	Moderately Agree	13
9. I find lecture/hands-on as the most effective way to learn computer.	4.69	Strongly Agree	2
10. Computer makes significant contribution to mankind.	4.65	Strongly Agree	3.5
11. I like computer subjects because I believe they are relevant to my course.	4.54	Strongly Agree	6
12. I am confident that I can solve problems in computer.	3.98	Agree	12
13. I find computer subject interesting.	4.53	Strongly Agree	7.5
14. I find computer subjects no necessary or relevant to my course.	1.91	Disagree	15
15. I like computer subjects so much that I want to be actively involved in the discussion.	4.49	Agree	9
<b>Composite Mean</b>	<b>4.18</b>	<b>Agree</b>	

The respondents moderately agreed that studying computer is not worth the time and efforts required (WM = 3.18) and they feel that they are not ready for the computer subject they are taking. They disagree that they find computer subjects no necessary or relevant to their course (WM = 1.91). The composite mean score 4.18 implies that engineering students have high level of attitude towards the Information Technology course. They see the relevance of computer to their future career and they feel ready to take the challenges of this course.

Table 2 presents the obtained weighted mean on the level of students' attitude towards the instructor.

**Table 2. Obtained Weighted Mean on the Level of Students' Attitude Towards the Instructor**

Attitude Towards the Instructor	WM	Verbal Interpretation	Rank
1. My computer teacher is my favorite teacher.	3.99	Agree	15
2. My computer teacher is very approachable.	4.35	Agree	14
3. My computer teacher explains the lesson very well.	4.41	Agree	13
4. Computer teachers' appearance enhance interest in the study of the subject.	4.48	Agree	11.5
5. My computer teacher can make the subject full of challenge and excitement.	4.55	Strongly Agree	5.5
6. The teacher reminds students to correct their undesirable behaviors.	4.52	Strongly Agree	8.5
7. The teacher fulfills promises (collecting projects on specific dates, giving credits for outstanding performance of extra assignments).	4.55	Strongly Agree	5.5
8. The teacher shows recognitions of students by smiling, nodding , greeting, etc. when he/she meets them outside of class.	4.52	Strongly Agree	8.5
9. The teacher shows interest in the subject matter through appropriate gestures, facial expression, lively voice, etc.	4.59	Strongly Agree	2
10. The teacher makes favorable comments when students give correct answers.	4.49	Agree	10
11. The teacher speaks clearly.	4.48	Agree	11.5
12. The teacher gives students challenging learning tasks, problems/seat works or assignment.	4.55	Strongly Agree	5.5
13. The teacher clearly explains the school grading system and is fair in giving grades.	4.61	Strongly Agree	1
<b>Composite Mean</b>	4.49	<b>Agree</b>	

The Engineering students strongly agreed that the teacher clearly explains the school grading system and is fair in giving grades with weighted mean score of 4.61. The respondents strongly agreed that the teacher shows interest in the subject matter through appropriate gestures, facial expression, lively voice, etc.(WM = 4.59); the teacher returns to students corrected test papers and other corrected test papers and other written assignments within the next three sessions(WM = 4.58); their computer teacher can make the subject full of challenge and excitement (WM =4.55); and the teacher fulfills promises like collecting projects on specific dates, giving credits for outstanding performance of extra assignments (WM = 4.55).

The respondents also agreed that their teacher speaks clearly (WM = 4.48); their computer teacher explains the lesson very well (WM = 4.41); their computer teacher is very approachable (WM = 4.35) and their computer teacher is their favorite teacher (WM = 3.99). These are the least rated items by the respondents in terms of their level of attitude towards the Instructors. The overall composite mean score of 4.49 signifies that the respondents have high level of attitude towards the instructors in Introduction to Information Technology.

Students are not looking at the characteristics of the teaching being their favorite. They are objective enough to evaluate on how the teachers deliver the lessons that help them achieve proper learning.

Table 3 shows the obtained Weighted Mean of the Level of Students' attitude towards the instructional materials.

**Table 3. Obtained Weighted Mean of the Level of Students' Attitude Towards the Instructional Materials**

	WM	Verbal Interpretation	Rank
1. I believe the lessons are not up-to-date since large storage media such as hard disk for large or advance programs are not available.	1.70	Disagree	5
2. I find it fascinating to research regarding computers because there are enough computer reference in the library.	3.72	Agree	4
3. I am excited when the time for computer subjects arrive because modern educational equipment such as multimedia projector is available for use in teaching computer lessons.	4.15	Agree	3
4. I like learning computer lessons because I am updated with the latest computer programs or software.	4.25	Agree	2
5. It's enjoyable taking computer subjects because I learn the use of computer peripherals such as trackballs, mouse and printers.	4.29	Agree	1
<b>Composite Mean</b>	<b>3.94</b>	<b>Agree</b>	

The respondents agreed that it's enjoyable taking computer subjects because they learn the use of computer peripherals such as trackballs, mouse and printers (WM = 4.29); they also like learning computer lessons because they can be updated with the latest computer programs or software (WM = 4.25); and they are excited when the time for computer subjects arrive because modern educational equipment such as multimedia projector is available for use in teaching computer lessons (WM = 4.15). Fundamental knowledge of computer would be very useful to students to continuously acquire more cognitive and affective learning from different classroom and laboratory activities.

The respondents disagree to this statement that they believe the lessons are not up-to-date since large storage media such as hard disk for large or advance programs are not available (WM = 1.70) which is the least rated item by the students. The overall composite mean score of 3.94 implies that the respondents have high level of attitude towards the instructional materials used in the subject Introduction to Information Technology. It is worthy to note that the computer laboratory is updated with the programming language and applications that the students need to experience.

Table 4 shows the obtained weighted mean on the level of students' attitude towards the learning environment.

**Table 4. Obtained Weighted Mean of the Level of Students' Attitude Towards the Learning Environment**

Attitude Towards the Learning Environment	WM	Verbal Interpretation	Rank
1. I like to study computer subject because of well-ventilated classroom and laboratory.	4.46	Agree	4
2. I like computer subject because there is sufficient cooperation and coordination among students.	4.29	Agree	7
3. I believe I am learning a lot since there is sufficient time for students' learning.	4.49	Agree	3
4. I am able to appreciate the importance of computers because there is no problem on the availability and access of computers for students' use.	4.50	Strongly Agree	2
5. I like working with computers because computer subjects are scheduled during convenient hours.	4.44	Agree	5
6. I feel comfortable learning the subject because of the proper arrangement of computers in laboratory	4.32	Agree	6
7. I am able to appreciate the lessons because the Instructor is using LCD projector for discussion.	4.57	Strongly Agree	1
<b>Composite Mean</b>	<b>4.44</b>	<b>Agree</b>	

The respondents strongly agreed that they can able to appreciate the lessons because the Instructor is using LCD projector for discussion (WM = 4.57) and they can able to appreciate the importance of computers because there is no problem on the availability and access of computers for students' use (WM = 4.50). LCD projectors are being installed in the classrooms and laboratories so that students could learn the lessons interactively especially in computer courses.

They also agreed that they believe they are learning a lot since there is sufficient time for students' learning (WM = 4.49); they like to study computer subject because of well-ventilated

classroom and laboratory (WM = 4.46); they like working with computers because computer subjects are scheduled during convenient hours (WM = 4.44); they feel comfortable learning the subject because of the proper arrangement of computers in laboratory (WM = 4.32).

They still agree, although it is the least rated among the seven items that they like computer subject because there is sufficient cooperation and coordination among students with 4.29 weighted mean score. Teachers might use teaching strategies that will stimulate teamwork and leadership skills of the students to establish cooperation. The overall composite mean score of 4.44 denotes that the respondents have high level of attitude toward the learning environment of the subject Introduction to Information Technology.

Table 5 presents the academic performance of engineering students based on their Final Grades in Introduction to Information Technology Course.

**Table 5. Academic Performance of Engineering Students Based on Their Final Grade in Introduction to Information Technology Course**

Range	F	Remarks	%
1.00 – 1.30	4	Excellent	9.8
1.31 – 1.80	13	Superior	31.7
1.81 – 2.30	17	Very Good	41.5
2.31 – 2.80	7	Good	17.1
2.81 – below	0	Fair	-
Total	41		100

Seventeen (17) students or 41.5 percent obtained a Very Good final grade ranging from 1.81 – 2.30 while 13 of them or 31.7 percent obtained a Superior remarks from 1.31 – 1.80 and seven (7) or 17.1 percent got a Good Remarks from 2.31 – 2.80. Only 4 or 9.8 percent of the students got an Excellent remarks with average final grade in IT both lecture and laboratory from 1.00 – 1.30. The overall average final grade of all participants in the study is 1.91 which signifies a Very Good remarks. This implies that the final grades of the students in general are considered high.

Table 6 reveals the test of correlation between the students' attitude and their Final Grades in the subject.

**Table 6. Relationship between the Students' Attitude and Their Final Grades in the IT Course**

Indicators	Sig.	Interpretation
SUBJECT ITSELF	0.792	High Correlation
instructor	0.781	High Correlation
INSTRUCTIONAL MATERIALS	0.762	High Correlation
LEARNING ENVIRONMENT	0.603	Moderate Correlation

The computed rho score of 0.792 between the attitude of the respondents towards the subject itself and their final grade in IT denotes high correlation. This implies that the higher the attitude of the students towards the subject, the higher the performance. The computed r-value of 0.781 between the attitude of the respondents towards the instructor and their final grade in IT also denotes high correlation. This implies that the higher the attitude of the students towards the teacher, the higher their performance.

The computed rho score of 0.762 between the attitude of the respondents towards the instructional materials and their final grade in IT also denotes high correlation. This implies that the higher the attitude of the students towards the instructional, the higher their performance; the lower the attitude, the lower the performance.

The computed rho score of 0.603 between the attitude of the respondents towards the instructional materials and their final grade in IT denotes moderate correlation. This implies that there is a moderate tendency that this proposition will be accurate to state that the higher the attitude of the students towards the learning environment, the higher their performance; the lower the attitude, the lower the performance.

### **Conclusion and recommendation**

Engineering students have high level of positive attitude towards the Introduction to Information. Result showed that students with high attitude towards the IT course have also demonstrated high academic performance in terms of their final grade in the course. So therefore, teachers must create a positive atmosphere inside the classroom and laboratory in performing the teaching and learning process. Encourage active students' participation through teamwork activities and brain stimulation exercises through games.

Teachers in general must dress properly and professionally to enhance the interest of the students in the subject. As well as the teachers must be approachable enough and must explain thoroughly and comprehensively the topic being discussed to compensate the tuition fees being paid by the students and also to make the learning process of the students enjoyable and satisfied. Reviewing of past lessons and giving more exercises and practice sets as the students' activities during laboratory periods will enhance deeply their appreciation of the lessons being discussed during lecture hours.

The confidence level of the students in solving problems in computer and readiness in taking the computer subjects must also be enhanced through different exercises and tests that will show their level of confidence and readiness in dealing with the subject. The students must be kept aware of their level and how they can increase this level of confidence before the end of the semester. Students must not only be given enough knowledge and skills for them to become successful but also enhancing their character and values will make them more unbeatable.

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