



Relationship with the Influence of Peers, Attitudes, Interests and Teaching of Lecturers for Achievement in Programming Course at Sultan Mizan Zainal Abidin Polytechnic (PSMZA)

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KEYWORDS	ABSTRACT
Learning Programming Programming Course Study Sample Student Achievement	This study aims to look at the relationship between the level of achievement of semester 6 students in the field of programming and its relationship with the influence of peers, attitudes, interests, and teaching of lecturers. The study sample of 123 people are students from Sultan Mizan Zainal Abidin Polytechnic (PSMZA). Study data were collected using a questionnaire as a research instrument. Data were analyzed using SPSS version 12.0 software to obtain percentages, mean scores, and correlations. The results of the analysis are shown in the form of tables, graphs, and reports. The study found peer factors, lecturer teaching, attitudes, and interests of students were greatly influences students in learning programming courses. This was based on the high mean score obtained for each factor. In terms of learning satisfaction, students are very satisfied in learning programming courses based on a mean score of 3.905. The peer factor obtained a mean value of 4.128, while the lecturers' teaching factor was at 4.012. As for the student attitude factor, 4.02 and students' interest obtained a mean value of 3.794. There was a weak relationship between interest and attitude factors with student achievement in the programming course based on a correlation value of only 0.179.

1.0 Introduction

Programming is the creation of a set of commands or instructions that instruct a computer in performing a task. Then these commands or instructions will be compiled and / or interpreted and then converted to instructions that can be executed by a computer or electronic device that can be used. IT is a broad field and covers all forms of technology used to create, process, store, and use information in various forms such as business data, voice messages, still images, movies and multimedia presentations. Furthermore, IT is also a fast growing field. It changed the world

Received October 2022; received in revised form November 2022; accepted December 2022

radically by introducing a variety of new ways of doing business, creating work, managing entertainment and creating art. In short, it covers matters related to computer science and technology that are closely related to programming.

The report of this study refers to the assessment of the influence of peers, attitudes, interests and teaching of lecturers, on student achievement in the field of programming. The study of this influence is evaluated as a continuation in PSMZA to look at various factors and their relationship in student achievement in the field of programming studies at this polytechnic. Therefore, this study will only focus on the achievement of students who are in semester 6. According to Woolfolk (2007) the concept of learning carries the meaning of changes that occur to human knowledge, skills or behavior as a result of the process of experience. These changes are usually permanent.

The determination of these objectives and questions has been found to be a guide and limitation to the study conducted. The discussion continued by reporting the approach and methodology used in conducting this study. It covers the study design, the study population and respondents, the instruments used, as well as how the data were analyzed and discussed. The focus was on the report of the results of the study in the form of data that have been obtained. In the final part, of the study findings are discussed by comparing and evaluating their relevance with previous studies and reports. Some suggestions and recommendations are also submitted either related to the study conducted and also the findings of the study obtained.

This study was made with the hope of identifying problems faced by students and finding exactly what affects their achievement in information technology. They can also open their own IT business without having to work with an organization if they are confident and have a deep understanding in programming.

2.0 Study Highlights & Hypothesis Construction

2.1 Learning Concepts

To enable the learning process to take place the individual needs to be aware of it and go through it directly. This learning process occurs as a result of the acquisition of information by humans from their environment.

If associated with the field of programming, the intended change can take the form of two conditions, namely understanding or increasingly misunderstanding. These factors actually influence students' attitudes and interest in learning. If they find that learning programming is uninteresting and increasingly confusing then they will not show seriousness and deep interest in learning it. But on the other hand, if the learning of programming can increase students' understanding and enjoyment then they will tend to work hard to understand and master it.

The effectiveness of a learning depends a lot on environmental factors such as attitudes, interests, teacher teaching, and peers (Quek, 2006). These factors are assessed as very important to the learning process of student programming in order to ensure good achievement.

Attitudes in this case are related to learning. Kamus Dewan (1996) defines attitude as an act or view based on an opinion, thought and others. In other words, attitude gives a high probability of success or failure in life. Whereas Ee (1996) defines attitude as mental and neural readiness that is compiled through experience which in turn influences an individual's response to all objects and situations related to it. Positive attitudes can be seen from the reactions, reactions or results of good behavior and in line with societal norms.

2.2 Overview of the Study

2.2.1 The Influence of Attitude

In general, students' attitudes toward programming are crucial. If students show disinterest and indifference towards the subject, it will indirectly affect their achievement. In addition, it must be admitted that it is difficult for a person to learn

something properly if he has zero interest in it. It is therefore natural that they are inattentive during the learning process.

Zamrah's (1999) study also shows that a positive attitude can produce excellent and visionary human beings. According to Ab. Alim Abdul Rahim. (2001) in turn found that attitudes have a specific effect on behavior, effort, interest and awareness.

2.2.2 Influence of Interest

The influence of high interest in certain subjects also affects the level of student achievement. In the same study Quek (2006) also found that interest has a positive influence on student achievement in mathematics subjects. This can be seen from the seriousness and effort made by students while studying the subject. Students with high interest will always strive and diligently improve themselves. In other words, their satisfaction will only be achieved when they learn and understand it. According to Omardin (1996), interest is an important factor as a motivator for students to be active in learning activities.

2.2.3 The Influence of Lecturer Teaching

Lecturers are the main thrust of education in institutions of higher learning. For the polytechnic level the lecturer is the implementer of the policies and goals of the curriculum. One of the important responsibilities of a lecturer is to arouse students' interest in his teaching. In the early stages a student has only a slight natural interest; so, when a person steps into the polytechnic level then the lecturers also play a role in nurturing their interest.

2.2.4 Peer Influence

The same goes for peer influence. As a growing adult, the influence of peers is significant. Peers play a role in influencing student academic achievement. They will always imitate and follow all the movements and behaviors of their peers. Quek's (2006) study also found that peers had a positive relationship with student achievement in mathematics subjects. This gives the impression that the improvement of mathematical achievement needs to take into account the peer group of the student.

3.0 Study Methodology

3.1 Study Design

The study conducted is a quantitative study that is a survey that uses a questionnaire as a data collection tool. The survey study is appropriate to the title of this study because it aims to see students' perceptions of programming courses in at polytechnics. The survey research approach was found to be effective and did not interfere with the teaching and learning process implemented and able to obtain the required data without any problems. Some of the things that need to be clarified include finding the relationship between the factors of attitude, interest, teacher teaching and peer influence with student achievement in the programming course. Correlation studies were selected to identify the relationship between these variables.

3.2 Population and Sample

The population for this study was students majoring in Diploma in Programming from Sultan Mizan Zainal Abidin Dungun Polytechnic (PSMZA). The table below shows the number of populations and samples selected as study respondents.

Table 1: Population Information and Study Sample

	PSMZA
Population	190
Sample	123

Based on the table above, the total sample selected was 123 students. The researchers found that the sample size of 123 people was sufficient to represent the entire population and make the study score more robust. In addition it will reduce errors in any decision made. This population meet the sample from krejcie and morgan table.

3.3 Research Instruments

This research is descriptive and uses a questionnaire as a data collection tool. The researcher chose the questionnaire instrument rationally that with a short period of time to get feedback and the respondents were said to be unlikely to be influenced by external elements and were biased. The data received from the questionnaire will be collected and will be processed and analyzed. In the questionnaire questions used in this study, there are 3 question approaches used namely choice questions, Likert scale and open subjective. The items included in the questionnaire questions are geared towards the research questions that arise.

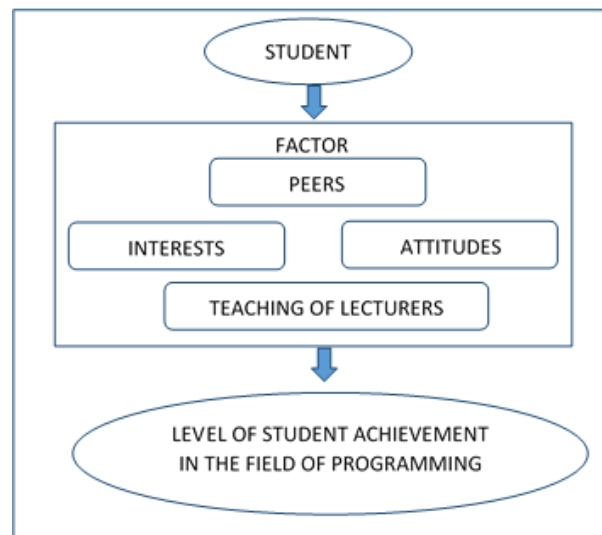


Figure 3: Theoretical Framework for the Study

The questionnaire consists of five (5) sections as follows:

- i. Part A: Respondent's Background Information.
- ii. Part B: Learning satisfaction among students.
- iii. Part C: Organizational Factors that influence students namely Peer and Teaching factors Lecturer.
- iv. Part D: Personal Factors that affect students, namely the Attitude and Interest of students.
- v. Part E: Student Achievement.

The scales for the demographic information section of the respondents are as follows in Table 2:

Table 2: Demographic Information

Respondent's Background	Choice
Age	18-22, 23-25, Less than 18 years
Gender	Male, Female
Semester	6

For section B, C, D and, the measurement using Likert Scale is as shown in the table below:

Table 3: Likert Scale

Level of Agreement	Scale
Strongly agree	5
Agree	4
Somewhat agree	3
Disagree	2
Strongly disagree	1

36 items have been produced in order to collect the information regarding the six factors appointed, learning satisfaction, peers, lecturers' teaching, attitude, interest and achievement. Table 4 below shows the total numbers of items according to the variable selected:

Table 4: Total Number of Items for Section B

Variable	Total
Learning satisfaction	6
Peers	5
Lecturers' teaching	7
Attitude	6
Interest	7
Achievement	6

3.4 Data Analysis Methods

Data obtained from 123 respondents will be collected and analyzed using SPSS version 12.0 software. Since this study is statistical, the findings will be compiled, summarized and presented in an easy -to -understand form in the form of tables, graphs or reports. While for hypothesis testing, techniques in inferential statistics are used which is a method to make conclusions or statements on the population based on information obtained from the sample. The researcher used Pearson correlation analysis to see the relationship between the variables that exist in this study. The table below shows the data analysis method for each research question and hypothesis.

Table 5: Data Analysis Methods

	No.	Item	Data Analysis Method
Research Questions	1.	To identify the students' level of satisfaction of learning the programming course.	Mean score
	2.	To identify the level of influence of peers and lecturers' teaching in the programming course.	Mean score
	3.	To identify students' perception on the influence of their attitudes in the programming course.	Mean score
	4	To identify students' perception on the influence of their interest in the programming course.	Mean score
	5.	To identify the relationship between interest and attitude factors with student achievement in the programming course.	Correlation
Hypothesis	1.	There is no relationship between interest and attitude factors with student achievement in the programming course.	Pearson correlation

Based on the developed questionnaire, the items in section A will be calculated using frequency and percentage calculation methods. Meanwhile, items in Sections B, C, D and E are calculated using the method of calculation of mean and standard deviation. Each scale selected by the respondents will be calculated mean based on the items in the questionnaire. The numbers 1,2,3,4 and 5 are coefficients according to the Likert scale score. Table 6 below has been used for classification.

Table 6: Mean Score Analysis

Source: Adapted from Landell(1997, in Noorsuriani, 2001)

Group code	Mean value	Level
1	1.00 - 2.33	Low
2	2.34 - 3.67	Moderate
3	3.68 - 5.00	High

While Pearson correlation coefficient was used to determine the relationship between the factors of attitude, interest, teaching of lecturers and peers with student programming achievement. This Pearson coefficient determines the degree of relationship between two factors through the figure + 1.00 to - 1.00 (Mohamed Najib, 1999). A positive index indicates a one -way relationship and a negative index indicates an inverse relationship. The correlation strength indicators obtained are determined based on Table 7 below:

Table 7: Classification of Correlation Strength

Range (+ or -)	Strength
0.0 to 0.2	Very weak, Very low
0.2 to 0.4	Weak, Low
0.4 to 0.7	Moderate
0.7 to 0.9	High, Strong
0.9 to 1.0	Very high, Very strong

4.0 Analysis and Results

The results of the analysis done on 5 parts of the questionnaire, namely part A regarding the demographic information of respondents, part B regarding learning satisfaction among students, part C regarding organizational factors such as peer factors and lecturer teaching, part D regarding personal factors i.e. attitudes and interests and part E with respect to student achievement in the programming course.

4.1 Respondent's Background Information

Based on the table below, a total of 93.56% of respondents aged 18-22 years, 5.26% aged 23-25 and the remaining 1.16% aged less than 18 years. While 31.5% are male students and the remaining 68.42% are female students.

Table 8: Respondent's Background Information

Respondent's Background	Choices	Frequency	Percentage
Age	18-22	160	93.56
	23-25	9	5.26
	Less than 18 years	2	1.16
Gender	Male	73	31.5
	Female	50	68.42
Semester	6	123	67.25

4.2 Learning Satisfaction

For data analysis for part B, there are 6 items used to demonstrate the level of learning satisfaction among students. The table below shows the mean and standard deviation scores for each item used in the questionnaire.

Table 9: Learning Satisfaction

No.	Item	Mean
1.	I feel as I am a part of a big family in this department.	3.77
2.	I would be reluctant to move or be instructed to move from this department.	3.71
3.	I feel happy to spend time studying in this department.	4.18
4.	I am eager to fulfil my role as a student every day	3.85
5.	My teaching/assignment in this department is really interested.	3.81
6.	I am happy to carry out my role as a student.	4.11
Mean for studying satisfaction factors		3.905

For the table 9 above, the third item which is "I feel happy to spend time studying in this department" shows the highest mean of 4.18. While the second item, "I would be reluctant to move or be instructed to move from this department" showed the lowest mean of 3.71 and. This proves that students do not have problems in the learning sessions in the information & communication technology department and are comfortable with the environments.

4.3 Organizational Factors

4.3.1 Peer Factors

For the table 10 below, the second item is "Peers always help in solving learning problems encountered" gave the highest mean score of 4.20. While the fourth item, "Every decision made always has the support of peers" gave the lowest mean score of 3.98. This situation may be due to students helping each other out. Perhaps the

learning method applied by the lecturer requires the concept of "Student centered" that is, students help each other in overcoming poor learning.

Table 10: Peer Factors

No.	Item	Mean
1.	Peers always share information regarding subjects with me.	4.19
2.	Peers always help in solving learning problems encountered.	4.20
3.	Peers always give encouragement and support,	4.16
4.	Every decision made always has the support of peers.	3.98
5.	The practice of mutual respect for each other regarding position is always practiced in the classroom.	4.11
Mean for peers factors		4.128

Peer needs are human nature. In socializing, friends also play an important role in shaping one's interests. In conclusion, peers will be able to influence other peers if they have similar interests and able to work together as well as motivating each other.

4.3.2 Lecturer Teaching Factors

For the table 11 below, the seventh item "Lecturers always help me in improving my weaknesses and reduce mistakes while learning" showed the highest mean score of 4.25, while the fifth item "I feel very confident for teaching techniques presented by lecturers" showed the lowest mean score, 3.87. The findings show that the lecturers' helps by diversifying teaching methods are essential in boosting the level of understanding in their students.

Table 11: Lecturer Teaching Factors

No.	Item	Mean
1.	I am satisfied with the lecturers' teachings.	4.08
2.	I like the challenges and new chances given by the lecturers.	3.98
3.	I always wait for the lecturers to come in classroom.	3.94
4.	I am happy to learn and gain new knowledge regarding Programming.	3.92
5.	I feel very confident for teaching techniques presented by lecturers.	3.87
6.	The lecturers have great ability to support and encourage me to pass in Programming course.	4.08
7.	Lecturers always help me in improving my weaknesses and reduce mistakes while learning.	4.25
Mean for lecturers' teaching factors		4.012

Lecturers are a key factor in contributing to the Excellency of student academics. A wise lecturer will make his teaching process something worthwhile. The efficiency and effectiveness of a lecturer also plays an important role as a mentor or model because it can influence students.

4.4 Personal Factors

4.4.1 Student Attitude Factors

Table 12: Student Attitude Factors

No.	Item	Mean
1.	I am satisfied with the learning load given.	3.82
2.	I like challenges and new chances.	3.91
3.	I always come early to my class.	3.87
4.	I am happy to work and cooperate with my classmates.	4.05
5.	I am really confident that I can pass every assignments given.	4.13
6.	I always improve my weaknesses and reduce mistakes while learning.	4.06
Mean for students' attitude factors		4.02

For the table 12 above, the sixth item "I always improve my weaknesses and reduce mistakes while learning" showed the highest mean score with a value of 4.06, while the first item "I am satisfied with the learning load given" showed the lowest mean score of 3.82. These student attitude factors play an important role and most students have a high motivation in repairing their weaknesses in order to overcome problems in R & D. Perhaps the results of counselling sessions or advice given by lecturers can help improve students' own performance.

4.4.2 Student Interest Factors

Table 13: Student Interest Factors

No.	Item	Mean
1.	I am proud to be a student in a programming course.	3.98
2.	I feel satisfy from the assignment I did.	3.93
3.	I am ready to work hard to ensure success in Programming course.	3.93
4.	I intend to pursue a career in programming when working later.	3.65
5.	I am interested and committed in Programming course and I feel that I play an important role in my class.	3.73
6.	I will accept any kind of assignments to continue working with my lecturers.	3.75
7.	I will always making improvement in my work to increase my reputation as a student in Programming course.	3.91
Mean for students' interest factors		3.794

For the table 13 above, the first item "I am proud to be a student in a programming course" became the highest mean score of 3.98, while the fourth item "I intend to pursue a career in programming when working later" got the lowest mean score of 3.65. The results of this study found that 90 percent of the students who took this DIP study had an IT background while in high school and they were indeed interested and chose programming as their field of study.

4.5 Student Achievement

For the table 14 below, the second item is "As a result of my efforts, I get results that are appropriate for the study period." Got the highest mean score with a value of 3.76, while the lowest item is the first which is "I am very satisfied with the achievements I have achieved so far" with a mean score of 3.63. This shows that this field of programming does not burden the students, they can divide their time well and get excellent and good results in exams.

Table 14: Student Achievement

No	Item	Mean
1.	I am very satisfied with the achievements I have achieved so far.	3.63
2.	As a result of my efforts, I get results that are appropriate for the study period.	3.76
3.	Programming course helps me in choosing my career in the future.	3.68
4.	For me Programming course is vast and will secure my future.	3.73
5.	I am confident with Programming course.	3.73
Mean for students' achievement		3.71

4.6 Analysis of the Relationship between Attitudes & Interests with Achievement in the Field of Programming

Inferential statistical analysis of the relationship between the existing variables found that there was a significant relationship between attitudes and interests with student achievement in the field of programming. However, as stated by Mohamed Najib (1999) a value of 0.11 indicates a very low level of correlation (Refer to Table 15 below).

Table 15: Relationship between Students' Attitudes and Interests with Achievement in Programming

Variable	Student achievement	Strength
Students' attitudes	0.069	Very low
Students' interests	0.174	Very low

Based on the table 15 above, the correlation value for the relationship between attitude and student achievement is 0.069 and for student interest with achievement is 0.174 which show a very weak relationship. This shows that students' attitude towards the field of programming is commensurate to their achievement. Similarly, the students' interest in this field is corresponding to their achievement.

5.0 Conclusion

Overall, the findings of the study found that peer factors, lecturer teaching, attitudes and interests of students greatly influences students in learning programming courses based on the high mean score obtained. In terms of learning satisfaction, students are very satisfied in learning programming courses based on a mean score of 3.905. The peer factor obtained a mean value of 4.128, while the lecturer's teaching factor of 4.012. As for the student attitude factor, 4.02 and students' interest obtained a mean value of 3.794. There was only a slight relationship between interest and attitude factors with student achievement in the programming course based on a correlation value of only 0.179.

By studying the relationship between factors such as attitudes, interests, lecturer teaching and peer influence, this study is expected to be a clearer and more accurate reference to anyone interested in student programming learning in polytechnics.

Acknowledgement

We are fully acknowledged University College TATI (UCTATI), Kolej Komuniti Kemaman and Kementerian Pengajian Tinggi Malaysia as our employer and sponsor.

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