

Students Mastery Level on Introduction to Economic Subject in Industrial Engineering Program of South Aceh Polytechnic

Devi Satri Saputra¹, Khairuman²
^{1,2}Departemen of South Aceh Polytechnic,
Email : devisatriasaputra@gmail.com

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ABSTRACT

An introduction to economics is a course taught in Industrial Engineering Department of South Aceh Polytechnic, the course is taught for second year students as a compulsory subject that must be mastered by students. The writer who has experienced the teaching in Industrial Engineering Department of South Aceh Polytechnic found that there were many students who found it difficult to master the course especially in understanding the demands and offers. Therefore, the writer conducted research on students' mastery in introductory to the economics course especially in demands and offered topic of Industrial Engineering Department students. The purpose of this study was to determine the level of student mastery on the demands and offers, various mistakes made by students in understanding the concepts and various factors that cause these mistakes. The research is a qualitative descriptive study. The subject of this study was the second year students of Industrial Engineering Department. Data collection techniques are carried out by conducting tests and interviews. Data obtained and converted into predetermined mastery criteria, and then the data will be analyzed using a percentage formula.

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I. Introduction

Polytechnic is an educational institution where interaction occurs in transferring some knowledge to students. Knowledge transferred contains values, attitudes, and skills in order to achieve educational goals. One of the goals of education that must be achieved is success in the economic field.

Economics is taught at every level of education, from Elementary Schools to Universities with different levels of material difficulties. In Elementary School students are only introduced to social arithmetic material, but in Middle School economics is taught specifically on certain subjects known as economics. In Higher Education economic lessons are divided into several subjects, such as Introduction to Economics, Agro economics, Cost Analysis and other subjects.

An introductory to economics is one of the courses taught in the South Aceh Polytechnic Industrial Engineering study program, where the course is taught for second semester students and compulsory subjects that must be mastered by Industrial Engineering students, because most industrial problems can be solved using science economy.

The experience of researchers while teaching in the South Aceh Polytechnic Industrial Engineering Study Program was found that many students complained that it was difficult to study economics subjects especially material on the concepts of demand and supply. The results of observations of researchers, this is caused by factors lack of concentration and interest in student learning during learning. According to Slameto [1] states that concentration is a concentration of thoughts on a matter by putting aside all things that are not related. Furthermore Djamrah [2] states that students who are interested in a subject will learn it seriously, because there is an attraction for him. In addition, the results of the observations of the researchers also found that the level of low student mastery of the subjects of economics was caused by a lack of



mastery of material such as mathematics courses.

The concept of demand and supply is part of the introductory material in economics where the level of student mastery of the material is still low. The average level of mastery of students in understanding the material is not as expected. This can be seen from the values obtained by students during the test. Therefore, the level of understanding of students in understanding the introductory subject of economics, especially in the material concepts of demand and supply, needs to be considered. Based on the problems that have been described, the researcher will conduct research on the level of mastery of students in studying introductory subjects in economics, especially in the material concepts of demand and supply.

II. Method

A. Research Approach

The type of research is categorized into descriptive research types, because this study aims to determine the level of mastery, type of error, and the causes of errors experienced by students in understanding the material being taught. To obtain data about the level of mastery, type of error, and the causes of errors experienced by students, the researchers used a qualitative approach. The qualitative approach is characterized by the data obtained in the form of descriptive data such as words both oral and written from the subject being observed. According to Sudjana [3] that the qualitative descriptive method is a research method that describes the data as it is and analyzes the questionnaire data of students' responses with qualitative explanatory sentences.

B. Research Subject

The research subjects were 1 semester of the second semester students of the South Aceh Polytechnic Study Program.

III. Results and Discussion

3.1. Research Result

3.1.1. Overview of Research Locations and Characteristics of Respondents

This research was conducted in the Diploma III Industrial Engineering Study Program at the South Aceh Polytechnic. Where the respondents involved in this study were 2017/2018 semester II students as many as one class who participated in the Introduction to Economics.

The characteristics of respondents consisting of Semester II students of Diploma III Study Program in Industrial Engineering of South Aceh Polytechnic are as shown in the table below:

Table 2. Respondents Characteristics

NO	NAME	SN	AGE	SEX	INDEX
1	Ruhul Hidayat	1704001	19	L	2,58
2	Novi Gita Sari	1704007	22	P	2,97
3	Riski Sartika	1704011	21	P	3,71
4	Muhammad Fadli	1704012	24	L	3,68
5	M. Jufri	1704013	20	L	3,21
6	Nurisma	1704014	19	P	3,75
7	Iqbal Putra Pratama	1704015	21	L	3,45
8	Riski Agusnaldi	1704016	20	L	3,08
9	Haris Fahmi	1704017	22	L	3,54
10	Nazaruddin	1704018	24	L	3,75
11	Mairifan Alim	1704019	20	L	2,71
12	Zamhur	1704020	22	L	3,33
13	Agus Saputra	1704101	21	L	2,33

NO	NAME	SN	AGE	SEX	INDEX
14	Mustika Ayu	1704102	19	P	2,88
15	Saidatul Annisa	1704103	19	P	3,17
16	Ferdi Wardani	1704104	22	L	3,46
17	Denny Saputra	1704105	20	L	1,78
18	Ikrami Maisarah	1704106	20	P	3,33
19	Rifki Munandar	1704108	18	L	3,18
20	Musliadi	1704110	19	L	3,25

The age of respondents ranged from 18-24 years, which was dominated by students with a number of respondents as much as 70 percent (14 people), the rest were female students as many as 6 people or 30 percent.

3.1.2. Level of mastery of material concepts of demand and supply

Based on the questions submitted to students about the concept of demand and supply, as many as seven students or 35% of them have scores or scores between 76-100 which indicate that they are Very Mastering (BC) the material being taught. A total of five students or 25% are in the score range of 56-75. These results indicate that they belong to the category of Poor Mastery (MK). While the percentage included in Mastering No (MT) calcification to material reached eight people or 40% with scores in the range 41-55.

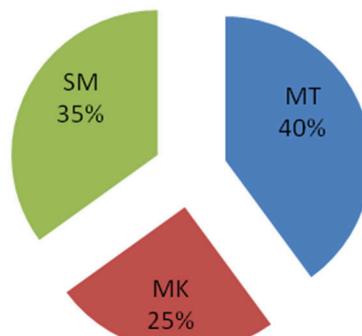


Fig 1. Percentage of material mastery

This percentage shows that mastery of the material concept of supply and demand is still poorly understood by students. The percentage becomes dominant up to 65% if combined between the percentage of students who are classified as MK and MT.

The details of the test results obtained for students of Semester II Diploma III Study Program in Industrial Engineering of South Aceh Polytechnic are as described in the following table:

Table 3. Classification of Concept Material Mastery Test Results

NO	NAME	SCORE	CLASIFICATION	MASTERY
1	Ruhul Hidayat	52	MT	1, 2
2	Novi Gita Sari	77	SM	12,3,4
3	Riski Sartika	80	SM	1,2,3,4
4	Muhammad Fadli	75	MK	1,2,3
5	M Jufri	75	MK	1,2,3
6	Nurisma	46	MT	1

NO	NAME	SCORE	CLASIFICATION	MASTERY
7	Iqbal Putra Pratama	78	SM	1,2,3,4
8	Riski Agusnaidi	57	MK	1,2,3
9	Haris Fahmi	55	MT	1,2
10	Nazaruddin	46	MT	1
11	Mairifan Alim	80	SM	1,2,3,4
12	Zamhur	52	MT	1,2
13	Agus Saputra	42	MT	1
14	Mustika Ayu	78	SM	1,2,3,4
15	Saidatul Annisa	42	MT	1
16	Ferdi Wardani	44	MT	1
17	Denny Andrian Saputra	75	MK	1,2,3
18	Ikrami Maisarah	75	MK	1,2,3
19	Rifki Munandar	78	SM	1,2,3,4
20	Musliadi	82	SM	1,2,3,4

For the mastery level category, referring to the data seen in the table above shows that there are seven students who have mastery of the material with categories 1,2,3 and 4. Four of them are included in the mastery categories 1,2 and 3.

The rest, three students who have mastery levels fall into categories 1 and 2 and five students who have mastery in category 1.

3.1.3. Types of mistakes made by students

In general, the lack of students' understanding of the material concept of supply and demand which is a topic of discussion in the Introduction to Economics is dominated by several factors. For example, there are a number of respondents who come not from the Department of Social Sciences, so they never get early learning or introduction to concepts in Economics. This caused them to be overwhelmed in taking courses. The types of errors that arise in the answers expressed by respondents can be detailed in the table on the next page.

Table 4. Types of Mistake

Question	Concept Mistake (%)	Principal Mistake (%)	Operation Mistake (%)
1	10	30	-
2	15	25	-
3	40	50	-
4	40	50	-
5	45	55	-
6	40	40	60
7	30	45	60
8	30	55	70
9	50	55	70
10	45	55	75
TOTAL	345	432	335
Average	17,25	21,6	16,75

The data in the table above shows that the most occurrence of fatigue is a type of principle validity that is equal to 21.60. This indirectly indicates a weakness in understanding the relationship between the concept and in the process of applying the

concept in a more applicable form. It also has a connection with the answers to essay questions and interviews where in the answers given students are not able to provide elaboration or explanation in more detail in the form of an applicable example.

3.1.4. Concept Mistake

At the concept level a number of respondents have been able to grasp the understanding or substance of the concept. Almost no errors were found, both in the interview process and essay answers. However, at the level of mastery of formulas and calculations as well as determining the balance of demand and supply curves, respondents generally still have problems. This is inseparable from various internal and external factors inherent in the respondents in studying the Introduction to Economics.

3.1.5. Principal Mistake

Principle is defined as a relationship between concepts or ideas simultaneously [4] Principles can be learned by understanding the concept of learning material and then applying the concept applied [5]. Based on the description, it can be concluded that the principle mistake made by respondents in answering questions related to the concept of supply and demand is due to their inability to understand the concepts and applied concepts of the concept.

3.1.6. Operation Mistake

Errors are found in terms of the operation of the supply and demand equation. Even in determining the balance of supply and demand curves. These errors occur because of their lack of understanding about how to perform calculations based on the formula of the demand function and the bid function. In fact, some respondents did not answer completely.

This error was acknowledged by some respondents on the grounds of: 1). they need to study Mathematics more intensively (Respondent 8). 2). need to increase learning motivation (Respondent 1). 3). "I have to learn more and understand what you are teaching" (Respondent 9).

Based on the expressions expressed by the respondents, implicitly shows that in them as students need improvement in terms of understanding mathematical calculations, learning motivation and delivery methods that are easily understood by students.

3.1.7. Verbal Mistake

Verbally found errors are caused by the unfamiliarity of students in discussing or speaking in public. This affects their ability to express views, ideas and arguments that they have actually mastered. Generally they are only able to express opinions in short, concise sentences. There is no concept elaboration and understanding in the form of examples and applications.

To anticipate this, one of the respondents suggested that the lecture activities were also filled with discussion activities. "Students must be given time to discuss expressing their opinions on the law of demand and supply, so that they are more understanding (Respondent 14).

3.1.8 Factors that cause the mistakes

The low mastery of material is motivated more by several factors such as those expressed by the respondents. Among them: 1). Respondents were high school graduates with educational backgrounds in the Department of Natural Sciences; 2). Never get an introduction or learning about Economics while studying in high school; 3). Many use terms that are sometimes difficult to understand; 4). Many formulas must be memorized; 5). Poor reading of reference books and low learning interest; 6). Cannot take lectures by relaxing; 7). The number of reference book supplies in the library is inadequate.

These seven factors become obstacles for some respondents in understanding the Introduction to Economics subject, especially those related to the concept of supply and demand.

However, there are also respondents who have different experiences, even though they do not have an educational background in Economics while in high school, but can understand the material about the concept of supply and demand and master the application. This is influenced by the level of enthusiasm in learning and being able to actively participate in the learning process and has studied in the Accounting Study Program before moving to the D-III Program in Industrial Engineering, South Aceh Polytechnic. "I really like economic courses, because there I really like debate" (Respondent 7).

Based on the findings above, it can be identified that the factors causing student errors in answering questions are as follows:

1. Educational background that is different from the courses taken
2. Difficulty understanding the terms and the number of formulas that must be memorized
3. Lack of interest in learning
4. Lack of reading interest and inadequate number of reference books
5. Implementation of learning processes that are not relaxed

5.2. Intended Output

Regarding the output that you want to get from this study are as follows:

1. Articles in the Scientific Journal
2. Poster

IV. Conclusion

Based on the results of the study in general it can be concluded that: First, respondents' understanding of the concept of supply and demand is dominated by students who are classified as Understanding Less and Understanding, which is equal to 65%. While the rest, 35% are included in the category of Very Understanding (BC). When viewed from the aspect of error, the most dominant form of error is a principle error with an average of 21.60. Whereas conceptual and operating errors amounted to 16.25 and 17.25.

Second, from the results of interviews with respondents it was found that there were a number of suggestions that were used as input in improving the level of mastery of the material, namely: 1. Provision of reading material before the lecture began. 2. Add a reference book for Introduction to Economics in the Library. 3. Lecturers need to motivate students to be able to increase their learning interest. 4. Need to develop an interactive and applicable learning model.

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