

The study of differentiated learning on students' English language ability in the mechanical engineering program of STT Ronggolawe Cepu

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Abstract

Differentiated learning is learning that accommodates students learning needs. Characteristics of differentiated learning include the learning environment invites students to learn, the curriculum has clearly defined learning objectives, there is ongoing assessment, teachers respond to or respond to students learning needs, and classroom management is effective Differentiated learning becomes unique when applied to higher education, especially in English lesson for non-English Department Students. In tutoring, the lecturers use various techniques but rarely use differentiated learning to improve students understanding of English. The study aims to determine the increasing of student's English lesson. The method used in the research is descriptive qualitative method. In analyzing the data, the writer applies constant comparative method (CCM) is a process developed by Glaser and Strauss. After carrying out the research, the following are the results of implementing differentiated learning. First, self-confidence increases. Second, vocabulary mastery and pronunciation improve. Third, speaking and writing skills increase. Fourth, the methods applied by the lecturer is varied so that students are motivated in studying English. These factors result in improving students average English proficiency. This is proven by the average of final semester test score of 75 in 2023.

Keyword

Differentiated learning, English language ability, Mechanical engineering program

Introduction

The current era of education requires teachers, lecturers or educators to be able to balance the needs of students or students. This description is very much in line with the definition of education contained in the Government Regulation of the Republic of Indonesia No. 57 of 2021 chapter I article 1 Concerning National Education Standards that education is a conscious and planned effort to create a learning atmosphere and learning process so that students actively develop their potential to have religious

Published:

October 20, 2024

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Selection and Peer-review under the responsibility of the 5th BIS-HSS 2023 Committee

spiritual strength, self-control, personality, intelligence, noble morals, and skills needed by himself, society, nation and state [1].

To implement an active learning atmosphere and learning process, a series of strategies are needed to achieve this. Especially for achieving English subjects. The technical English course at STT Ronggolawe is English language skills which is a supporting field of knowledge [2] for students to be able to express their thoughts to other parties. This Engineering English course is expected to make students have high communication skills [3] in the scientific realm and preparation for the world of work. Based on mastery and knowledge of the functions of the English language as well as the variety and tuning of spelling skills, punctuation marks, sentences, paragraphs and types of discourse that are appropriate to science, as well as producing texts from various sources according to the scientific field. Students are expected to be able to write and speak well in English.

STT Ronggolawe students who generally study with the aim of studying engineering at the engineering faculty or studying economics at the economics faculty in English, usually called the non-English Department [4], will face difficulties when faced with English lectures. Apart from being a compulsory subject, this course is also a provision for students in the world of work that they will be involved in.

The results of observations made on undergraduate students in Mechanical Engineering show that there are 2 factors that become obstacles for students in understanding Engineering English, namely intrinsic and extrinsic factors. Intrinsic factors are largely influenced by the individual interests of students themselves, including: 1) lack of self-confidence, 2) less mastery of vocabulary [5], 3) difficulty in pronunciation, 4) fear of making grammar mistakes. Meanwhile, extrinsic factors include: 1) There is no understanding of the material regarding the importance of learning English [6], 2) There are relatively few opportunities to learn English, 3) The methods applied by lecturers still tend to be monotonous so that students are less motivated in studying English [6], 4) Lack of support from the surrounding environment, such as parents [7], in recognizing learning methods that suit students learning characteristics. These factors result in their average English proficiency still being low. This is proven by the average final semester test score, which is 53 in 2022.

The various influences that cause students to find it difficult to learn English were also expressed by Megawati in her research entitled Students Difficulties in Achieving Active English Learning which shows that the level of difficulty of research subjects in learning English is very diverse, this happens because different English language mastery factors [8].

After the problem formulation has been determined, a problem-solving approach is needed. Differentiated learning is an alternative to reduce the problems felt by non-English Department students. Differentiated learning is learning that accommodates students learning needs. Characteristics of differentiated learning include; the learning environment invites students to learn, the curriculum has clearly defined learning

objectives, there is ongoing assessment, teachers respond to or respond to students learning needs, and classroom management is effective [9].

To implement differentiated learning, there are three (3) strategies that can be implemented: 1) Content differentiation, 2) process differentiation, and 3) product differentiation [10]. This learning will have a very good impact on students. Each student has different learning characteristics from one another, it is just that sometimes students themselves are not aware of their learning characteristics. If students are given services that do not suit their needs, then this can prevent them from being able to progress and develop their learning. In classes that implement differentiated learning, the average student feels welcomed, their learning characteristics feel appreciated and ultimately there is hope of improving their learning abilities, especially in English lectures.

Methods

The study used descriptive qualitative approach. The direct data source is taken from the mechanical engineering students of STT Ronggolawe. The technique of collecting the data is conducted by taking list of observation that aimed at finding the information about the effectiveness of implementing differentiated learning method. In analyzing the data, the writer used descriptive percentage analysis. The method is implemented in finding the result of the variables that exist in the study. This descriptive percentage is processed by dividing the frequency by the number of respondents multiplied by 100 percent, as follows:

$$p = \frac{f}{n} \times 100\%$$

Then, to analyze the qualitative data, the researcher applied Constant Comparative Method as suggested by Glaser in Moleong (2005). CCM was analyzing the data by comparing one category to another constantly. They said that in general, the data analysis process included data reduction, data classification, data synthesis, and ended by action hypothesis.

Results and Discussion

Results

The result of the observation note shows that almost all the students get the target in implementing differentiated learning on student's English ability in the mechanical engineering program of STT Ronggolawe Cepu. It can be shown from the response to do the tasks that given by the lecturer. The Table 1 means that the differentiated learning method gets a positive response from the students. Based on the data, it shows the increasing in data before research and after research. The highest score is reached by the indicator of teamwork capability 83. After that it is followed by communication

skill 80. Then intellectual skill and leadership get 75. The last is creative innovative thinking skill which gets 62.

Table 1. The result of Field Note Observation

Indicators	Pre-Observation	Post Observation
Intellectual Skill	62	75
Creative Innovative Thinking Skill	59	62
Communication Skill	51	80
Teamwork Capability	69	83
Leadership	70	75
Average Score	62.2	75

Discussion

To implement differentiated learning, there are three strategies that can be implemented: 1) Content differentiation, 2) process differentiation, and 3) product differentiation. This research will focus on content differentiation. This content differentiation is focused on the curriculum and material about what students learn [10]. Content differentiation in English learning can be implemented with the following activities:

1. Providing various reading levels in materials for literature/reading;
2. Providing various teaching materials through modules, videos or practices;
3. Provide a variety of vocabulary to determine students level of readiness;
4. Present ideas audio-visually; and
5. Practice reading friends in small groups or peer tutoring.

The activity of differentiated learning on student's English ability in the mechanical engineering program gives chance to the students to be active in studying (See **Error! Reference source not found.**).



Figure 1. A student rises his hand in implementing differentiated learning method on student's English ability in the mechanical engineering program

The students' problems in tutoring English can be solved using the differentiated learning method. Implementing this method, Intrinsic factors are largely influenced by the individual interests of students themselves decreases. The student's problems

related to extrinsic factors also improve. It includes the improvement of understanding of the material regarding the importance of learning English, opportunities to learn and acquire the information about English, the methods applied by lecturers are more various so that students are more motivated in studying English. The last support from the surrounding environment increases due to the group task and their communication skill. These factors result in their average English proficiency improve. This is proven by the average final semester test score, which is 75 in 2023.

Conclusion

The non-English student's problem can be solved by designing the method in teaching or learning process. Differentiated learning method can be stimulated in solving the non-English students program. There are five indicators to measure the effective of this learning method. They are intellectual skill, creative innovative thinking skill, communication skill, teamwork capability, and leadership. Most of these indicators increase while implementing this method. As a result, the student's problems can be solved. Their ability in learning English improves.

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