Motivation and Attitudes of Indonesian Mechanical Engineering Students towards Learning English

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Abstract. Motivation and attitudes are important factors in learning English effectively. The purpose of this study is to investigate the motivations and attitudes of Indonesian mechanical engineering students regarding English learning. This is a qualitative research method which used an online platform questionnaire survey to collect data. Participants in this study included 25 mechanical engineering students from Balikpapan University in Indonesia. The data was analyzed by categorizing quantitative data derived from questionnaires based on frequency of distribution. The findings revealed that Indonesian mechanical students in engineering were enthusiastic about learning English and had a positive attitude toward it. Furthermore, the results show that the participants placed a greater emphasis on instrumental motivation for learning English. It is indicated that they would like to participate in training sessions to increase their ability to match instrumental motivation. This study's findings confirmed that attitude and motivation were important factors in learning English. As a result, teachers and lecturers must work hard to increase motivation and positive feelings toward English language learning. This study may assist teachers in improving their classroom preparation by gaining a better grasp of their students' attitudes and simplifying learning activities for them. Furthermore, the findings of this study may help authorities and policymakers understand the importance of students' attitudes in developing ESP education policies, creating curriculum, and developing materials for ESP students.

Keywords: Motivation, Attitudes, Mechanical Engineering Students, Learning English, ESP

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INTRODUCTION

English proficiency is critical for academic students because it enables them to access a wealth of information. This is because the overwhelming majority of scientific publications are in the English language. Furthermore, in the context of engineering, English proficiency is crucial for engineering students both academically and professionally. It has played a critical role in providing many opportunities for students to advance their careers as skilled workers.

Skilled workers are expected to have both hard and soft skills, as well as the ability to speak both their first language and English as a second language fluently in order to comprehend their working jobs efficiently. English is a critical tool in engineering education, as Pendergrass et al. (2001) state. Thus, it is an effective way to increase the oral and written communication skills of engineers that English is incorporated into engineering, science, and mathematics courses. Educators must conduct research and identify the factors that influence the learning process in order to assist engineering students in developing stronger communication skills.

The motivation and attitudes of students toward the working language, in this case, English, are examined among the most important issues. Gardner (1985) stated that language attitudes and language learning motivation are thought to be the most important predictors of language acquisition success and failure. "Motivation" is defined by Gardner & Lambert (1972) as the overall goal of the learner of a second language, and "attitude" is defined as the learner's persistence in achieving that goal. Evidence for a positive correlation between English proficiency and a positive attitude and a strong desire to improve one's English communication skills has been accumulating, for both instrumental and integrative purposes (Brown, 2007). As a result, it can be concluded that some people who have a positive attitude and motivation toward learning a language will learn it faster and easier than others who do not have the same positive attitude and motivation.

Students' motivation and attitudes are important factors in learning English effectively in the realm of languages. Motivation and attitudes are not fixed concepts and can vary from one context to the next. They also act differently in different people. As a result, studies of motivation and attitudes have been conducted and replicated in a variety of contexts (time, place, participants, etc.). When reviewing related literature, recent relevant studies consistently stated that many students have high motivation and positive attitudes toward English (Al-Tamimi & Shuib, 2009; Alaga, 2016; Arwin, 2019; Bobkina & Fernandez, 2012; Dadi, 2018; Ditual, 2012; Elyazale, 2019; Jefiza, 2017; Junaidi & Agustina, 2020; Kajan & Shah, n.d.; Kashefian-Naeini et al., 2018; Lai & Aksornjarung, 2018; Manzoor et al., 2017; Mat & Yunus, 2014; Nurul Fitriah & Noraini, 2017; Prayoga & Suryasa, 2020; Tham & Hong, 2018).

Motivation is defined in the context of language acquisition as the extent to which a person is working or trying to learn a language out of desire and the satisfaction that comes with it (Gardner, 1985). A distinction is often drawn between two forms of motivation, that is, instrumental and integrative motivations in the studies of second language learners (Gardner, 1985). Instrumental motivation, according to Gardner (1985), is defined as the act of learning a language for the benefit of another person or for a less clearly perceived benefit to the learner.
Integrative motivation, on the other hand, has been described as learn a language to identify the target language or integrate it into society (Gardner, 1985). Cooper and Fishman (1977, as cited in Al-Tamimi & Shuib, 2009) mentioned a third type of motivation in addition to Gardner's integrative and instrumental constructs: Personal or developmental motivation, which refers to activities such as reading English-language books and watching movies that contribute to one's personal development or satisfaction.

Attitudes can be defined as instincts and feelings, prejudice or prejudices, preconcepts, anxieties, threats and beliefs regarding a specific subject (Gardner, 1985). The individual's reaction to anything associated with the immediate context in which the language is taught is referred to as their attitude toward the learning situation. One of the critical individual factors that influences learning behaviors is one's attitude toward learning.

The acquisition of one or more second or foreign languages is referred to as second language acquisition (Nunan, 1999). Many factors influence whether or not a person succeeds or fails in learning a second language. Motivation and attitudes are two of them. Gardner (1985) stated that language attitudes and language learning motivation are thought to be the most important predictors of language acquisition success and failure. Language learning attitudes and motivation are intertwined (Ellis, 1997). Moreover, to have a successful language learning experience, both motivation and a positive attitude are required (Gardner, 1985). Researchers (Allen et al., 1974; Bidin et al., 2009; Dornyei, 2001; Thang, 2004) support this ideal relationship by arguing that students with positive attitudes and high motivation will outperform those with negative attitudes and low motivation.

Despite the fact that many studies on motivation and attitudes toward learning English have been conducted, they tend to focus on EFL/ESL context. Few studies have investigated needs from the perspective of ESP learners’ motivation (Jafari Pazoki & Alemi, 2019). Some studies that have measured attitudes and motivation in ESP (English for Specific Purposes) context (Al-Tamimi & Shuib, 2009; Bobkina & Fernandez, 2012; Elyazale, 2019; Manzoor et al., 2017; Tham & Hong, 2018). They still have not explored Indonesian context. Thus, this current study may still be relevant to be conducted in the Indonesian ESP context. Indeed, more research into mechanical engineering students’ motivation and attitudes in the Indonesian context is still required and should be carried out in order to understand the factors that influence students' language learning experiences.

Furthermore, the findings of this study could assist EFL/ESL/ESP lecturers/teachers in similar contexts in designing lessons and teaching strategies that match student motivation and attitude to learn English as a working language in the future. This study may also assist teachers in improving their classroom preparation by gaining a better grasp of their students' attitudes and simplifying learning activities for them. The findings of this study may help authorities and policymakers understand the importance of students' attitudes in developing ESP education policies, creating curriculum, and developing materials for ESP students. This is critical because learners who are unmotivated and have a negative attitude are less likely to complete their goals, which will have a serious impact on learners'
success. Therefore, the purpose of this study is to investigate the motivation and attitudes of Indonesian mechanical engineering students towards learning English.

**RESEARCH METHOD**

This study was quantitative in nature because it is the process of collecting and analyzing numerical data. Participants in this study included 25 Indonesian mechanical engineering students from Balikpapan University ranging in age from 18 to 26. They were all male students enrolled in English II in their second semester. Furthermore, they have previously taken English I. The majority of them (36%) have studied English for more than ten years. Despite these years of language instruction, the proficiency level is still low for these students. Participants in this study were invited to participate voluntarily and were assured that the information gathered would be kept confidential.

The instrument for this study is a questionnaire adapted from (Al-Tamimi & Shuib, 2009). The questionnaire asked about the respondent's background, English learning motivation and English learning attitudes. Furthermore, the motivation questionnaire batteries were divided into three sections: instrumental, integrative, and personal motivation. In total, 17 questions were posed English. To reduce ambiguity in responses, participants were instructed to respond to the questionnaire items on a 4-point Likert Scale. For motivation scaling, the researcher used a four-point Likert Scale that only included “Not important – 1”, “Less important – 2”, “Important – 3”, and “Very Important – 4”. For attitudes, the scale is “Strongly Disagree – 1”, “Disagree – 2”, “Agree – 3”, and “Strongly Agree – 4”.

The current study used an online survey to collect data. After receiving approval and consent from the participants, the questionnaire was administered via Google Form to the students at the end of semester. The participants were given time approximately a week to answer the questions in the online questionnaire. The researcher then gathered all of the questionnaires and typed their responses into an Excel spreadsheet for later analysis.

Data analysis began with the categorization of quantitative data derived from questionnaires. The frequency of distribution was used to analyze the questionnaires. It means that the collected data was analyzed using frequency counts, which were then converted to percentages. The mean scores from Likert scales can be interpreted using the criteria listed in Table 1. Based on class interval calculation, the criteria for interpreting mean scores were developed (Ruangprapun, 2000 cited in Imsa-ard, 2020). The class interval is calculated by subtracting the maximum and minimum scores and then dividing by the number of scales; in this case, the class interval is 0.75. Following that, they tabulated data, that is, they entered data into tables in various categories using the Microsoft Excel application. The following stage is the calculation and conversion of percentages based on the number of responses entered. The next step is to write a discussion of the research findings, and the final step is to draw a conclusion.
RESULT AND DISCUSSION

This section is broken into two sections: Mechanical engineering students' determination to study English and views toward English learning. The information gathered from the questionnaire was used to present the findings in each section. The data analysis results are shown below.

Motivation to Learn English

To determine students' motivation to learn English, a total of 25 students were tasked with ranking a list of six justifications that they believed were important for enhancing their English learning, and then to respond to a question about their interest participating in additional English courses to help them improve their skills. For the question in questionnaires, the mean values of the participants are shown in Table 2. Essentially, the averages/mean are just an arithmetic average of the responses which indicates "not important", two denoting "less important," three denoting "important," and four denoting "extremely important." On the other hand, table 3 summarizes the responses to the latter question by percentage of participants.

Table 2. Students’ results on their motivation to learn English

<table>
<thead>
<tr>
<th>Types of Motivation</th>
<th>Statement</th>
<th>Mean</th>
<th>Overall Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>Instrumental</td>
<td>1) I learn English because it will enable me to carry my tasks more efficiently.</td>
<td>3.6</td>
<td>3.425</td>
</tr>
<tr>
<td></td>
<td>2) I learn English because it will enable me to get a job easily.</td>
<td>3.6</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) I learn English because I hope to further my education.</td>
<td>3.5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>4) I learn English because it is a university requirement.</td>
<td>3.0</td>
<td></td>
</tr>
<tr>
<td>Personal</td>
<td>5) I learn English for personal development.</td>
<td>3.4</td>
<td>3.1</td>
</tr>
<tr>
<td></td>
<td>6) I learn English because it will enhance my status among my friends.</td>
<td>2.8</td>
<td></td>
</tr>
<tr>
<td>Integrative</td>
<td>7) I learn English to integrate with the western culture.</td>
<td>3.0</td>
<td>3.0</td>
</tr>
<tr>
<td></td>
<td>8) Others (please specify)</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

As shown in table 2, there are three types of motivation: instrumental motivation, integrative motivation, and personal motivation. Instrumental motivation received the highest mean scores of all the participants' results (overall
mean = 3.435) for items 1, 2, 3, and 4. For example, the participants who preferred English language instruction enables them to perform their duties more efficiently and get a job received the same results with the highest mean score, 3.6. The remaining instrumental motives, i.e., learning English to further their education and as a university requirement, were also deemed important by the students, with mean scores of 3.5 and 3.0, respectively.

Personal motivation/reasons, along with instrumental motives, consist of items 5 and 6 as a secondary motivating source for students and a total average of 3.1. The participants admitted that they are motivated to learn English for personal development (mean=3.4) and to improve their social standing (mean=2.8). According to Table 2, participants (mean=3.0) believed they desired to learn English in order to "assimilate to western culture" as an integrative motivation.

In terms of motivation, the overall findings revealed that the majority of Indonesian mechanical engineering students were extremely motivated to learn English. According to the findings, the participants placed a greater emphasis on instrumental motivation when learning English. This reaffirms their belief that English is critical to their lives, both now and in the future. They believed that learning English would help them find a better job and be useful in the future. They see English as a tool for achieving some external purpose. One reason for this could be that the participants' perceptions of their goal for learning English were influenced by the learning situation. Students study English as a required topic, and success in English acquisition is regarded as vital for future success. The students' proclivity for instrumental motivation could also be extremely beneficial to the institute's advancement.

The current results were consistent with some studies that the participants placed a greater emphasis on instrumental motivation when learning English. Al-Tamimi & Shuib (2009) and Bobkina & Fernandez (2012) revealed that individuals were more likely to favor instrumental motives for learning English, such as utilitarian and academic ones. Dadi (2018) stated that learners are highly motivated to learn English, and they are delighted when they do it, as they believe that learning a target language is worthwhile time. Junaidi & Agustina (2020) discovered that the student are slightly more strongly instrumentally motivated to learn English. Lai & Aksornjarung (2018) stated that students were motivated in the English CBI (Content-based Instruction) classroom. Therefore, the students' proclivity for instrumental motivation could be extremely beneficial to the institute's advancement.

The participants chose instrumental motivation rather than personal motivation. The most plausible explanation for this phenomenon is that, during an economic downturn, young people are more concerned with the utility of the language rather than the personal benefits it may give.

For integrative motivation, the results of the participants show that English learning in the cultural sphere of the participants has the least impact on their motivation for English. This phenomenon is quite surprising in this popular era of English and could be due to a growing sense of national pride, which could also be one of the reasons for the students' rejection of any culture other than their own. Indonesian has contributed to national pride by serving as a symbol of nationhood.
The language is also used as the official language for national communication and as a medium of teaching in educational institutions (Anas; Dardjowidjojo as cited in Zein, 2019).

Given their reasons for wanting to learn English, participants were encouraged to express their thoughts on the idea of taking more English courses to enhance their abilities. Table 3 shows that 96 percent of them said 'yes,' according to the results, that nearly everyone expressed an interest in taking additional English language classes to hone their English skills. The most logical reasoning is that they lacked the language skills necessary for academic and professional success.

Table 3. The students' findings concerning their language training needs

<table>
<thead>
<tr>
<th>Statement</th>
<th>Yes</th>
<th>%</th>
<th>No</th>
<th>%</th>
<th>Total</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Would like to attend more English language training courses which will help you to improve your proficiency in the language?</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>9)</td>
<td>24</td>
<td>96</td>
<td>1</td>
<td>4</td>
<td>25</td>
<td>100</td>
</tr>
</tbody>
</table>

Attitudes towards the English

The results of the questionnaire on students' attitudes toward English are presented in this section. It's worth noting that the data analysis was based on all 25 students' responses to eight statements, for which they had to select one of four options: strongly agree (4 points), agree (3 points), disagree (2 points), and strongly disagree (1 point). The means are simply the arithmetic averages of the responses multiplied by each alternative's point. As shown in Table 4, percentages were assigned to improve data analysis.

Table 4. Students’ results regarding their attitudes towards English

<table>
<thead>
<tr>
<th>Statement</th>
<th>Strongly Disagree</th>
<th>Disagree</th>
<th>Agree</th>
<th>Strongly Agree</th>
<th>Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td>1) The development of our country is possible mainly by educated people who know English well.</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>7.6</td>
<td>3.2</td>
</tr>
<tr>
<td>2) The use of English in government and business offices helps in getting things done easily.</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>7</td>
<td>8</td>
</tr>
<tr>
<td>3) English should not be a compulsory subject in secondary schools in Indonesia.</td>
<td>7</td>
<td>11.5</td>
<td>5</td>
<td>16.4</td>
<td>8</td>
</tr>
<tr>
<td>4) English should be the medium of instruction in the secondary schools in Indonesia.</td>
<td>0</td>
<td>0</td>
<td>4</td>
<td>9.9</td>
<td>11</td>
</tr>
<tr>
<td>5) At least some subjects like Physics and Chemistry</td>
<td>2</td>
<td>2.7</td>
<td>4</td>
<td>10.7</td>
<td>11</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td>11</td>
<td>44</td>
<td>8</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>42.7</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
</tbody>
</table>
Motivation and Attitudes of Indonesian Mechanical – Retnowaty (1-12)

According to the findings in table 4, the majority of the participants with mean scores of 3.6 (74.7 percent) expressed a strong willingness to speak fluent English. Positive language attitudes, as observed by Rahimi et al. (2008), will encourage learners to have a positive orientation toward the second language. Positive attitude and high motivation are two characteristics that should be recognized in second language and foreign language learning.

Additionally, the participants' agreement to support the use of English in government and business offices facilitates the completion of tasks in a timely manner, as evidenced by the same 3.4 mean scores for English instruction beginning in first grade in Indonesian schools.

Participants have a favorable attitude (mean=3.2) toward three questionnaire statements about "Our country's development is made possible in large part by educated individuals who are fluent in English."; "English should be the medium of instruction in secondary schools in Indonesia"; and "English movies are more fun than any other language movies." Additionally, when asked whether "at least certain subjects, such as physics and chemistry, should be taught in English at the high school level in Indonesia," participants responded positively (mean=3). Finally, an intriguing finding was that the least mean value was 2.5. The students expressed their dissatisfaction with the cancellation of English classes in secondary schools and their negative attitudes toward the decision.

Individuals' attitudes are determined by their beliefs about the outcomes or characteristics of performing behavior. In terms of attitudes, the overall results revealed that the majority of Indonesian mechanical engineering students have positive attitudes toward English in relation to our country's development which is aided in large part by educated people who can communicate effectively in English.; the use of English in government and business offices speeds up the process of getting things done; and the language of instruction in schools should be English. At the secondary level in Indonesia, English should be used to teach at least some subjects, such as physics and chemistry. English should be taught in Indonesian schools as early as the first grade; Participants wish they could speak English as well as someone else when they hear someone do so; and Films in English are more entertaining than films in any other language.
Due to the significant and well-established link between attitudes toward learning and willingness to learn, participants who expressed favorable attitudes toward English can be considered highly motivated learners. The results confirm other researchers’ findings (Al-Tamimi & Shuib, 2009; Alaga, 2016; Arwin, 2019; Bobkina & Fernandez, 2012; Dadi, 2018; Ditual, 2012; Elyazale, 2019; Jefiza, 2017; Junaidi & Agustina, 2020; Kajan & Shah, n.d.; Kashefian-Naeini et al., 2018; Lai & Aksornjarung, 2018; Manzoor et al., 2017; Mat & Yunus, 2014; Nurul Fitriah & Noraini, 2017; Prayoga & Suryasa, 2020; Tham & Hong, 2018) that most participants have positive attitudes towards English and the learning of the language. The participants recognize the significance of English and are eager to learn and improve their command of the language. Their answers showed that almost everyone was willing to speak fluently in English, especially when they hear someone speaks English fluently. This demonstrates the participants’ strong desire to learn English and communicate effectively in the language. These feelings may stem their wish to be efficient in their academic areas and in particular qualified in global companies where competence in the English language is the exclusive condition for employment.

When students have a positive attitude toward studying English, they demonstrate an interest in the language and a want to learn more. Learners who are motivated are more likely to succeed in acquiring a second or foreign language and are more inclined to put up more effort even if they face hurdles. Regardless, the findings of this study offer some insight into what motivates Indonesian mechanical engineering students to learn English. Because motivation is known to be particularly difficult to foster in ESP contexts such as the current study, we believe the findings discussed here may provide primary EFL, particularly ESP teachers, with an insider's view into understanding their own students and what can be done to motivate them to study. It is advised that teachers/lecturers in EFL/ESP schools push students to learn English by emphasizing its value. Teachers should be receptive to their students' attitudes, as they can influence their success in foreign language learning. In a nutshell, ESP teachers/lecturers should engage students in activities that foster positive attitudes toward English language acquisition.

Teaching can use four teaching practices to increase or maintain students' motivation in learning English: creating basic motivational conditions; generating initial motivation; maintaining and protecting motivation; and encouraging positive self-evaluation (Dörnyei as cited in Lai & Aksornjarung (2018)). In other words, teachers can create a motivating learning environment by eliciting students' prior experience or knowledge and arousing their interest and desire to learn more, and they should create teaching tasks that engage and motivate students while providing positive feedback and encouraging them to value themselves.

The effects of students' attitudes on ESP language learning should be considered by curriculum designers and policymakers. The findings of the study can be utilized to suggest certain pedagogical implications that should be considered when developing an English language curriculum for mechanical engineers. In terms of integrative motivation, the results indicate that English learning in the participants' cultural domain has the least impact on their motivation for English. Curriculum designers who are aware of these issues need to communicate their knowledge of
attitude-related solutions with teachers or lecturers, who should use this information in their classrooms to encourage good attitudes toward English language learning and to reverse any bad attitudes that may undermine students' motivation. Those in charge of English language policy should also place a greater emphasis on integrative motivation than instrumental motivation and take steps to encourage students' real interest in the English language and culture. Teachers can then implement these regulations in order to boost students' integrative motivation. If this discovery is disregarded, learning outcomes may fall short of expectations.

CONCLUSION

The purpose of this study is to investigate the motivation and attitudes of Indonesian mechanical engineering students toward learning English. As a result, it was discovered that students' determination to learn the English language was strengthened by their positive attitude and motivation toward the language. Furthermore, the findings revealed that instrumental motivation is the primary source of motivation for mechanical engineering students to learn English. Participants expressed an interest in attending training courses in order to match the instrumental motivation. As a result, the findings of this study confirmed that attitude and motivation were important factors in learning English.

Furthermore, teachers and lecturers should work to increase positive attitudes toward English language learning. According to Oxford & Ehrman (1995), teachers have to do everything possible to boost the motivation of FL/SL learning by making sure that the materials and tasks have the capacity to stimulate good performance. The need for the students to reverse any negative attitudes that could harm student motivation is presented as necessary. This is a positive attitude to be cultivated by teachers.

According to the findings, the majority of mechanical engineering students are instrumentally motivated and have positive attitudes regarding English learning. As a result, English language classes in ESP should be geared to assist them in achieving this goal. The majority of students agree that speaking proficient English is essential. However, because the existing ESP course is only one semester long, it is insufficient to aid students in developing linguistic skills. This necessitates an increase in both the duration and number of courses offered. As a result of these findings, Indonesian primary and secondary schools should consider using English as a medium of instruction, according to the students' expressed wishes. Their need could be a factor in this, particularly in fields such as engineering to have a good command of the English language before enrolling in higher education.

However, because the study's findings were limited to participants at Balikpapan University in Indonesia, they may be developed for further research. Furthermore, the research tool used in this study was only a survey (questionnaire). It would have been preferable if statistics could have been collected using both survey and interview methods to ensure that the information obtained from the quantitative data was aligned with the interview, which would have provided a better and more in-depth understanding of the factors that influenced students' motivation and attitudes toward learning English.
REFERENCES


