Conference Paper

The Effect of Self-Efficacy and Learning Achievement of Students in the Class of 2016/2017 at Borobudur University, Jakarta

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Abstract

The purpose of this study was to determine whether there is a significant correlation between self-efficacy and student achievement. This study uses a quantitative approach. The subjects of this study were 135 active undergraduate students of the Borobudur University class of 2016/2017 in the faculties of science and humanities. This study used proportionate stratified random sampling so that 73 students from the faculty of science were obtained and 57 students in the humanities field were obtained. The data analysis method in this research is linear regression. The results of this study indicate that there is an effect of self-efficacy on student achievement in class 2016/2017 at Borobudur University. The regression model test shows (Sig 0.00 < 0.05), with a correlation coefficient (R) of 0.272 and 0.293 in the exact sciences and humanities faculty, this shows that there is a mutual relationship between the self-efficacy variables and learning achievement in the low category. The coefficient of determination (R Square) in the faculty of science and humanities students is 0.074 and 0.086. It means that only 7.4% and 8.6% of the variation in learning achievement can be explained by the self-efficacy variable, and the rest is influenced by other factors.

Keywords: self-efficacy, students’ achievement, students

1. Introduction

Student life is a life full of struggles. The transition of individuals from high school to a college-level is an adaptation that is not easy to live with. Students should undergo teaching activities in college and as a student are required to be able to face and solve various problems that they face during the lecture process. These changes include lifestyle changes and changes in learning styles. The lifestyle of students who are considered independent and different from high school creates gaps for individuals. Then the change in learning style from high school to college is also a difficult part for students to make accounting so that the target of learning achievement changes also in...
Besides, in entering college, students are required to use their cognitive to the maximum, such as being able to think creatively, being able to be independent, and responsible in the learning process as well as in living life.

Borobudur University is one of the universities in East Jakarta that has seven faculties in the undergraduate program. In understanding the phenomenon more about the success of student learning at Borobudur University, researchers conducted initial interviews with faculty representatives in four faculties including the faculty of computer science, faculty of psychology, faculty of engineering, and faculty of health sciences. Based on the results of the initial interview, we found several problems experienced by students in the class of 2016/2017 among others; 1) poor time management where many students are unable to arrange lecture time with their personal affairs so that lectures become abandoned; 2) always delay the time of work on lecture assignments; 3) low learning spirit resulting in the impaired learning process and affecting student attendance and learning performance; 3) too much thought but no action taken; 4) unable to socialize and adapt well, and 5) often follow the advice of negative role models. The consequences of these unhandled problems will ultimately result in a decline in their academic achievement.

On the other hand, based on the results of initial interviews conducted by some lecturers from four faculties, also found that there are students in the class of 2016/2017 who have succeeded in undergoing lectures and many of those students have entered the final task, although they are often faced with situations and conditions that are not good. It is because students have good time management, have the ability to evaluate themselves, have responsibility for themselves, always think positively in every condition and situation, have an active and independent attitude, and can manage emotions well.

Based on this phenomenon, it was found that one of the main factors of student success in overcoming the problem was self-efficacy. Self-efficacy can be defined as a human’s belief in his ability to exercise several measures to control their self-function and events in the environment (Feist & Feist, 2014). The level of self-efficacy influences students to face problems. High self-efficacy will motivate individuals cognitively to act more persistently and directed, especially if the goals to be achieved are clear goals.

Research related to “The effect of Self-Efficacy on Student Achievement of Postgraduate Students in PAI STAIN Kediri Study Program with Motivation as an Intervening Variable” found that self-efficacy had an effect on the learning achievement of postgraduate students at PAI STAIN Kediri by 67.4% and the remaining 32.6% is influenced by other factors. Based on the four sources of efficacy that are able to establish or strengthen a person’s increased self-efficacy, performance experience is the most effective source in
forming strong self-efficacy in PAI STAIN Kediri Postgraduate students. This explains that increasing self-efficacy is not only due to the potential that exists within the individual but can also be strengthened from outside the person (Sufirmansyah, 2015).

Then, research related to “Contribution of Self Efficacy to Academic Achievement of Students of the 2016/2017 PKK Study Program” found that F count (16,507) > F table (3.94) where the probability value is p (0.000) < 0.05, which means that the hypothesis is accepted. The results showed that self-efficacy had a positive effect on increasing student academic achievement where self-efficacy had an important role in increasing self-confidence in students (Sari, 2017).

By seeing the importance of the influence of self-efficacy on student learning achievement, the researcher feels the need to conduct further research entitled “The Effect of Self Efficacy on Student Learning Achievement at Borobudur University”. What can we propose from this research compare to previous self-efficacy research is this research is based on the FGD with the lecturers. Their perception for the students who are not on a good track in the length of study is because of their motivation. It is still become a question, even for the students who have a good GPA. Through this research, it is hoped that it can become a reference for academic supervisors and thesis supervisors in increasing student self-efficacy so that they can pass the lecture process well.

### 2. Literature Review

#### 2.1. Self-Efficacy

Self-efficacy is a person’s belief in his ability to exercise some form of control over one’s functions and events in the environment (Feist & Feist, 2014). Another definition of self-efficacy is the extent to which an individual estimates his or her ability to carry out the task or action required to achieve it (Monika & Adman, 2017). Based on these two definitions, it can be concluded that self-efficacy is a form of belief possessed by individuals to be able to complete tasks or solve problems independently.

Furthermore, self-efficacy is a meaningful supporting aspect in the learning process because it will affect learning outcomes, the students with high self-efficacy will believe that they can complete all existing tasks even though they get a troublesome assignment, whereas the students with self-efficacy low will have the thought that he is not able to do all the assignments that are in the student learning process, besides that self-efficacy can also help someone completely or do academic tasks (Ningsih & Hayati,
Therefore, if individuals can develop appropriate positive feelings about self-efficacy, it can help that individual to enhance achievement, believe in abilities, develop internal motivation, and enable students to achieve more challenging goals.

Furthermore, self-efficacy can be obtained, modified, increased, and decreased through one or a combination of the following four sources; 1) performance experience, namely achievements that have been achieved in the past, as a source, past performance is the modifier of self-efficacy with the strongest influence; 2) the vicar experience, namely through a social model where self-efficacy will increase when observing the success of others, on the other hand, self-efficacy will decrease when observing people whose abilities are roughly the same as themselves fail; 3) social persuasion, this condition is a sense of trust in the persuasion giver; and 4) emotional states, namely strong emotions, fear, anxiety, stress can reduce self-efficacy, but it can occur, increase in emotion that is not excessive can increase self-efficacy (Sufirmansyah, 2015).

Self-efficacy is measured through three dimensions, namely; 1) level/magnitude, related to the difficulty of the task in which the individual will choose a task based on the level of difficulty; 2) generality, related to behavior in which a person feels confident in his ability based on previous experience, and 3) strength, is related to a person's belief about the extent to which he is sure he will be able to carry out the task as well as possible. Based on this, it can be concluded that self-efficacy is not related to the skills possessed by a person, but is related to beliefs about what he can do with the skills he has regardless of the size (Khayati & Sarjana, 2015).

2.2. Learning Achievement

Learning achievement is a learning outcome activity. Learning achievement has an important role in determining the achievement of the program objectives that have been set. The factors that affect learning achievement, include; 1) internal factors, such as physical (health and disability), fatigue (physical and spiritual fatigue), psychological (intelligence, interests, attention, and motives); 2) external factors such as school (teaching methods, teacher-student relations, and curriculum), family (home, family economic condition, and family cultural environment), and society (mass media, friends, and student activities in society). Based on the factors that affect learning achievement, this study limits the use of internal factors, namely self-efficacy which is included in the category of psychological factors (Witurrachmi & Hamidi, 2017).
Student learning achievement is measured by an Achievement Index (IP) which is expressed as a number. IP is the average value which is the final value unit that describes the quality/quality of the success of the completion of the study program. The performance index is divided into two, namely the semester achievement index and the cumulative grade point index. The results of the learning evaluation at the end of the semester can be given a predicate by following per under the IPS or GPA obtained:
1) GPA 3.65-4.00 has cum laude predicate; 2) GPA 3.35-3.64 has a very satisfactory predicate, 3) GPA 3.00-3.34 has a satisfactory predicate (Drafting Team, 2017).

2.3. Self-Efficacy and Learning Achievement

Bandura believes that self-efficacy is an important factor affecting student achievement. Self-efficacy has in common with the motivation to master and intrinsic motivation. Self-efficacy is the belief that “I can” whereas helplessness is the belief that “I can’t.” Students with high self-efficacy agreed with the statements “I know that I will be able to master this material and I know that I will be able to master this material”. The beliefs possessed by each individual are different. Bandura tries to apply the concept of self-efficacy to many aspects and student achievement. As a result, the concept ultimately influences student activity choices. Students with low self-efficacy may avoid many study tasks, especially those that are challenging and difficult, whereas students with high self-efficacy are willing to undertake challenging and difficult tasks. They will diligently try to master the learning task than students who have low self-efficacy (Santrock, 2013).

Furthermore, four sources of efficacy that can establish or strengthen an increase in a person’s efficacy. The four sources are mastery experiences, vicarious experiences, social persuasion, and psychological and emotional conditions. Of the four sources, mastery experience is said to be the most effective source in forming a strong self-efficacy in an individual. On the other hand, mastery experiences are successes that have been achieved by individuals in the past. Meanwhile, vicarious experiences are experiences that are gained after seeing the success of other people who are “on the same level” with that individual. Next, social persuasion is obtained through encouragement given by people who are considered to have “more legality” by an individual. The last one is a psychological and emotional condition, which is a condition experienced by a person when doing certain activities. Based on this, it can be concluded that self-efficacy cannot only be increased because of the potential that exists in each individual, and it also can be strengthened from outside oneself (Alwisol, 2011).
3. Method

This research is included in quantitative research because in this study the variables are analyzed statistically and the results are shown with numbers (Sugiyono, 2010). This research approach uses a comparative causal quantitative approach to see the effect of cause and effect between the two variables, namely self-efficacy as an independent variable and student learning achievement as dependent variables at Borobudur University.

Furthermore, based on the theoretical background and referred to the previous research, the researchers develop the instruments in this research used the self-efficacy scale in the form of questionnaires. The self-efficacy scale is structured using a Likert scale based on three dimensions, there are level, generality, and strength (Khayati & Sarjana, 2015). The validity and reality of the self-efficacy variable test are obtained a validity value between 0.255-0.714 with a reliability coefficient of 0.866 so that the self-efficacy scale is declared valid and reliable. While in the variable of learning achievement uses the grades of GPA students in the class of 2016/2017 who took the faculty in the field of exact science and humanities in Borobudur University, East Jakarta.

The population in this study is the undergraduate students of Borobudur University in 2016/2017 which are spread in seven faculties at Borobudur University, divided into two categories, students in the exact science faculties (Faculty of Engineering, Faculty of Agriculture, and Faculty of Health Sciences) 73 respondents and students in the faculty of humanities (Faculty of Law, Faculty of Economics, and Faculty of Psychology) 62 respondents so that, the total population is 135 students. Meanwhile, the sampling technique in this study is proportionate stratified random sampling. Based on the calculation of comparable stratified random sampling obtained samples for faculty students from exact science are 63 and faculty of humanities are 57 students so that, the total sample is 120 students.

The method of analysis in this study is a simple linear regression analysis that serves to know there is no influence between self-efficacy and variable learning achievement. Simple linear regression is based on the functional or causality relationship of one independent variable with one dependent variable (Sugiyono, 2010).
4. Results and Discussions

Based on the results of descriptive statistics on the students of the Exact Science Faculty, it shows that the mean of self-efficacy is 58.9365 and the learning achievement is 3.2019. Next, the standard deviation of self-efficacy is 7.49598 and the standard deviation of the learning achievement is 0.32504. The results of descriptive statistics on the students of the Humanities Faculty show that the mean of self-efficacy is 58.8070 and the learning achievement is 3.3653. Meanwhile, the standard deviation of self-efficacy is 6.81500 and the standard deviation of the learning achievement is 0.23214.

The research describes that in 63 students of the Exact Science Faculty, 29 of them (46%) categorized themselves in low self-efficacy and 34 others are in the high self-efficacy category. Meanwhile, from 57 students of the Humanities Faculty, there are 29 students (50.88%) in the category of low self-efficacy and 28 others (49.12%) are in the high self-efficacy category.

Furthermore, this study also described that in 63 students in the Exact Science Faculty, there are 5 students (7.94%) who get low learning achievements, 26 students (41.27%) get medium learning achievements, and 32 (50.79%) students get high learning achievements. Meanwhile, for 57 students in the Humanities Faculty, there is 1 student...
(1.75%) who get a low learning achievement, 23 students (57.9%) who get medium learning achievements, and 23 students (40.35%) who get high learning achievements.

Next, the researchers also conduct a normality test. The data is said to be normal if the sig value > 0.05. For the students in the Science Faculty, the sig value for self-efficacy is 0.185 and learning achievement is 0.200, because the significance value for both variables is > 0.05. Meanwhile, from the normality test on the students in the Humanities Faculty, it is found that the sig value for self-efficacy is 0.200 and learning achievement is 0.200, because the significance value for the two variables is > 0.05, it can be concluded that the variables of self-efficacy and learning achievement of students in Exact Science and Humanities Faculties are normally distributed.

Additionally, the researcher continues with the linearity test. Based on the linearity test, it is found that the sig value of the deviation from the linearity of students in the Exact Science Faculty is 0.558. Meanwhile, the sig value of the deviation from the linear of students in the Humanities Faculty is 0.770. Due to the sig value > 0.05, it can be concluded that between the learning achievement variables and self-efficacy of students in the Exact Science Faculty, there is a linear relationship.

Based on the ANOVA test or F test on students majoring in the exact field, it is found that the F count is 4.884 with a significance level of 0.031. Because of the probability of 0.031 < 0.05, the regression model can be used to predict learning achievement. In other words, self-efficacy affects the student's learning achievement in the Exact Science Faculty.

### Table 3: Categories of Students Based on the Learning Achievement Norm

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Category</th>
<th>Subjects</th>
<th>Percentages</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exact Sciences</strong></td>
<td>Low</td>
<td>5</td>
<td>7.94%</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>26</td>
<td>41.27%</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>32</td>
<td>50.79%</td>
</tr>
<tr>
<td><strong>Humanities</strong></td>
<td>Low</td>
<td>1</td>
<td>1.75%</td>
</tr>
<tr>
<td></td>
<td>Medium</td>
<td>33</td>
<td>57.9%</td>
</tr>
<tr>
<td></td>
<td>High</td>
<td>23</td>
<td>40.35%</td>
</tr>
</tbody>
</table>

### Table 4: ANOVA Summary

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Model</th>
<th>Sum of Square</th>
<th>df</th>
<th>Mean Square</th>
<th>F</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Exact Sciences</strong></td>
<td>Regression</td>
<td>.486</td>
<td>1</td>
<td>.486</td>
<td>4.884</td>
<td>.031</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>6.065</td>
<td>61</td>
<td>.099</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>6.550</td>
<td>62</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Humanities</strong></td>
<td>Regression</td>
<td>.258</td>
<td>1</td>
<td>.258</td>
<td>5.148</td>
<td>.027</td>
</tr>
<tr>
<td></td>
<td>Residual</td>
<td>2.760</td>
<td>55</td>
<td>.050</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>3.018</td>
<td>56</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Sciences Faculty. Meanwhile, for students majoring in humanities, the F count is 5,148 with a significance level of 0.027. With the probability of 0.027 < 0.05, the regression model can be used to predict learning achievement or in other words, self-efficacy affects the learning achievement of students in the Humanities Faculty.

<table>
<thead>
<tr>
<th>Faculty</th>
<th>Model</th>
<th>Unstandardized Coefficients B</th>
<th>Std. Error</th>
<th>Standardized Coefficients Beta</th>
<th>t</th>
<th>Sig.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Exact Sciences</td>
<td>1</td>
<td>(Constant) 2.506</td>
<td>.317</td>
<td></td>
<td>7.997</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-efficacy .012</td>
<td>.005</td>
<td>.272</td>
<td>2.210</td>
<td>.031</td>
</tr>
<tr>
<td>Humanities</td>
<td>1</td>
<td>(Constant) 2.779</td>
<td>.260</td>
<td></td>
<td>10.690</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Self-efficacy .010</td>
<td>.004</td>
<td>.293</td>
<td>2.269</td>
<td>.027</td>
</tr>
</tbody>
</table>

Based on the results of the research hypothesis testing, it is found that there is an effect of self-efficacy on students’ achievements in faculties, Exact Sciences and Humanities fields at the Borobudur University. The correlation coefficients (R) of students in faculties of Exact Sciences and Humanities are 0.272 and 0.293. It shows that there is a relationship between the self-efficacy variable and the learning achievement in the weak category because the result is < 0.5. The coefficient of determination (R Square) for students majoring in Exact Sciences is 0.074 and the coefficient of determination of students in the Humanities faculty is 0.086. This shows that only 7.4% of the variation in the learning achievement of students in the Exact Science Faculty, and 8.6% of the variation in learning achievement of students in the Humanities Faculty can only be explained by the self-efficacy variable.

The purpose of this study is to determine whether there is a significant influence between self-efficacy and the achievement of the year 2016/2017 students at Borobudur University. The results of data analysis show that there is a significant influence between self-efficacy and the student achievement of the year 2016/2017 at the Borobudur University, in both faculties, Exact Sciences and Humanities. The effect of self-efficacy of the students in the Exact Science Faculty is 7.4%, meaning that 92.6% of the influence is caused by other factors. Meanwhile, the effect of self-efficacy on students’ achievement in Humanities Faculty is 8.6%, meaning that 91.4% of the influence is caused by
other factors. The higher the student’s self-efficacy, the higher the student’s learning achievement. On the contrary, the lower the self-efficacy, it has the lower the students’ achievement.

Furthermore, the results of this study are also in line with entitled “The Influence of Self-Efficacy and Self-Regulated Learning on Student Learning Achievement at the Faculty of Economics, State University of Jakarta.” It was found that self-efficacy has a great role in behavior or learning patterns in students, especially in learning achievement. Students with a high level of efficacy believe that they can go through the learning process well, can do all the tasks assigned to them, and believe that they will be able to achieve good achievements. Students with high self-efficacy will have confidence in their ability to organize and complete tasks to achieve the desired results at a certain difficulty level. This condition will affect the pattern of high independence in learning as well. This individual will be able to manage his learning experience effectively, to achieve optimal learning outcomes (Maisaroh, 2015).

Further research states that self-efficacy affects the learning achievement of PAI STAIN Kediri Postgraduate students by 67.4% and the remaining 32.6% is influenced by other factors. Based on four sources of self-efficacy, namely performance experience, vicar experience, social persuasion, and emotional conditions that can form or strengthen an increase in one’s self-efficacy, performance experience is the most effective source in forming strong self-efficacy in students. It explains that the increase in self-efficacy is not only due to the potential that exists within the individual but can also be strengthened from outside oneself (Sufirmansyah, 2015).

Based on previous studies and associated with this study, self-efficacy is an effort to increase student learning achievement because there are three basic dimensions. In the first dimension, namely “level” can be seen from tasks that can be completed well, from simple tasks to difficult tasks without feeling any doubt. The second dimension, namely strength, can be identified through mastery of various subjects (fields of work) as well as in completing a task. Whereas in the last dimension, namely students’ stability in completing similar assignments are given by lecturers can be completed properly. The three dimensions are one of the benchmarks for improving student academic achievement (Khayati & Sarjana, 2015).

Besides, self-efficacy can affect students’ achievement because of self-efficacy or belief in individuals. They can foster high motivation to achieve goals in the learning process. Individuals with high self-efficacy will generate motivation. The motivation for achievement uses the skills, efforts, and abilities of an individual that will be needed
to achieve goals, and before the individual reaches these goals, the individual must believe in his abilities (Abdullah, 2014).

Furthermore, Bandura suggests that self-efficacy is a substantial factor in determining learning achievement, but the influence that can be given can be in the form of direct or indirect effects, in this case, an individual who has high self-confidence in his abilities himself (self-efficacy) will try to master and conquer any given exam questions. This belief is certainly based on or followed by other efforts such as having a learning strategy, a pattern of learning arrangements. The confidence that is owned is strengthened by learning efforts that will then improve learning achievement, but if self-confidence is not followed by real action it will not affect learning achievement (Santrock, 2013).

Then, when seen in table 6, it is found that the correlation coefficient for students at the Borobudur University is 0.272 in the exact sciences faculty and 0.293 in the humanities field, indicating that there is a weak relationship between self-efficacy and learning achievement because the correlation coefficient is $<0.5$ (Yoenanto, 2017). This poor relationship is because learning achievement is not only influenced by internal factors (self-efficacy) but is also influenced by external factors (environmental factors) and real action (Sufirmansyah, 2015).

Based on the results of the correlation coefficient in this study, the self-efficacy of Borobudur University students needs to be improved. Self-efficacy can be obtained, modified, increased, and decreased through one or a combination of the following four sources; 1) performance experience, namely achievements that have been achieved in the past, as a source, past performance is the most influencing self-efficacy modifier; 2) the vicar experience, namely through a social model in which self-efficacy will increase when observing the success of others, on the other hand, self-efficacy will decrease when observing people whose abilities are there about the same as themselves fail; 3) social persuasion, this condition is a sense of trust in the persuasion giver; and 4) emotional state, namely strong emotions, fear, anxiety, stress can reduce self-efficacy but it can occur, an increase in emotions that is not excessive can increase self-efficacy (Alwisol, 2011).

Based on this research, self-efficacy of students of Borobudur University class 2016/2017 can be improved by modifying individual self-potential and encouragement obtained from individuals or circumstances in their surroundings. Although self-efficacy is an internal factor and has a dominant influence, external factors can also contribute to one’s self-efficacy. The combination of information experience, vicar experience, social persuasion, and emotional state is a combination in shaping or strengthening one's self-efficacy.
5. Conclusion

Based on the results of this study, it can be concluded that there was a significant influence between self-efficacy and student achievement of class 2016/2017 students at the Borobudur University, both in Exact Sciences and Humanities Faculty. The influence of self-efficacy on the learning achievement of the Science Faculty students was 7.4%, the rest was influenced by other factors, while the learning achievement of Humanities Faculty students is 8.6%, and the rest was influenced by other factors.

By paying attention to the results obtained, the researcher provides several suggestions, among others; 1) with this research, students of the 2016/2017 class of Borobudur University can optimize their self-efficacy, not only limited in having self-confidence but also based on real action so that they were able to optimize their learning achievement; 2) For teachers, this research was expected to encourage and motivate students to use more self-efficacy skills in optimizing student learning achievement.

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The Researchers convey the big gratitude to the head of LPPM, the deans and heads of study programs, and students in the class of 2016/2017 at Universitas Borobudur who have helped researchers from pilot studies to research implementation. Furthermore, the researchers also convey big gratitude to the Ministry of Research, Technology and Higher Education, the Directorate General of Research and Development Strengthening who has provided research funding assistance through the novice lecturer grant scheme. This research is expected to contribute to the Dean/Head of Study Program and lecturers to motivate students to use more self-efficacy skills in optimizing student learning achievement.

References


