

# Academic Self-Efficacy As Predictor Of Academic Achievement

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## Abstract

*The purposes of this research are 1) to analyze the differences of the effect of gender, years of study, and major on the academic self-efficacy, and 2) to predict academic self-efficacy in determining academic achievement. This is a quantitative research using a survey approach. The location of this study is STKIP Singkawang (School of Teacher Training and Educational Science). The sample used is 223 students, which consisted of 112 males and 111 females. The data collection technique used is a questionnaire using a Likert scale. The data were analyzed using SPSS with descriptive statistical techniques, correlation, regression, and univariate GLM analysis. The results confirm that; 1) different majors have a significant influence on academic self-efficacy compared to the gender and years of study. The students of social sciences major have higher academic self-efficacy than those in the exact sciences major.; 2) self-efficacy has a positive relationship and is also a predictor in determining academic achievement. This shows that any improvement in academic self-efficacy will be accompanied by an improvement in the academic achievement.*

**Keywords:** Academic Self Efficacy; Gender; Years of Study; Major and Academic Achievement

## 1. Introduction

Studying in higher education levels has very high academic demands, thus, the students must have confidence to be able to adjust positively to their academic environment. Confidence in the self-ability is also called self-efficacy. In Bandura's social cognitive theory (1986), self-efficacy is a vital key, which is defined as an individual's trust in the abilities possessed in organizing and implementing actions to achieve the desired goals (Bandura, 1997). In the academic environment, self-efficacy is one of important factor that has a major contribution for the students' success, because it greatly influences the choices and actions to achieve the expected goals (Pajares, 2002).

An Academic self-efficacy is based on the students' belief that they are capable of successfully achieving academic assignments or achieving learning goals at predetermined levels (Bandura, 1997; Eccles & Wigfield, 2002; Elias & Loomis, 2002; Linenbrink & Pintrich, 2002; Schunk & Pajares, 2002). In addition, the academic self-efficacy also refers to the students' perceptions of their abilities in completing each assignment given (Midgley et al. 2000). Then, Bandura (1986) revealed that the academic self-efficacy refers to the student' assessment related to how well they are in completing assignments given by the teachers in the class.

The students with high self-efficacy level can be seen from their ability to manage, carry out, and solve the problems related to the learning tasks, certainly with the belief that the tasks can be completed successfully (Bandura, 2013). This is reflected in their behavior which shows good enthusiasm in working on the tasks, such as collecting the assignments punctually, never complaining when an assignment is given, and always trying to do the tasks given despite having a high level of difficulty. Meanwhile, those having low self-efficacy levels tend to choose certain tasks that fit their abilities and do well, but if the tasks are believed to be too difficult, they tend to avoid and ignore them. Indicated behavior like the rejection of a task that is considered complex, are easy to complain when they are given a

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task with a short time span, often late in collecting it, and easy to give up on difficult tasks. This explanation emphasizes that the nature of self-efficacy is not oriented to the ability of a person to complete a given task, but rather to the belief that he is capable of completing various jobs that have been given. This is in line with the explanation of Pajares & Miller (1994) who revealed that the self-efficacy is a student's belief in his ability to master new skills or tasks related to a particular academic domain.

The academic self-efficacy in each individual is not the same. Some are high, and some are low. From a gender perspective, several studies revealed that women commonly have higher self-efficacy than men (Mahyuddin et al, 2006; Tenaw, 2013; Huang, 2013). Other studies found that men had higher self-efficacy than women (Wilson et al, 2007; Vogt et al, 2007), and there are also studies which reveal that there are no significant differences between men and women (Choi, 2005). The differences in some of the results can be caused by different research sites, so that the sample of characteristics contained in each result are also different, especially in terms of culture.

Self-efficacy in the academic domain will always be related to the academic achievement possessed by the students. This is because the students with high self-efficacy level will have a stronger interest in working on the academic tasks through clear goals and make maximum efforts to achieve them (Fennolar et al, 2007) so that later it creates a good work system and is accompanied by perseverance (Torres & Solberg, 2001). If it is understood that way, then the academic self-efficacy will have a significant relationship to the high academic achievement. Various studies have shown that this relationship is positive and significant (Byrne et al, 2014; Chairiyati, 2013; Fenollar et al, 2007; Phan, 2010; Warsito, 2009; Zajacova et al, 2005).

Various studies on self-efficacy that focus on students at universities as research subjects produce various findings. Sari & Mariah (2017) surveyed the contribution of self-efficacy to student academic achievement. This study took a sample of 98 students. The results of the study were analyzed using simple linear regression, which proves that self-efficacy has a positive contribution to student academic achievement ( $F = 16.507$ ,  $p < .05$ ). Then the research conducted by Ildil et al. (2016) about the level of students' self-efficacy based on gender. There were 221 students selected as samples in this study. The results obtained from the t-test analysis showed that self-efficacy between males and females had a significant difference ( $t = 2,962$ ,  $p < .05$ ).

Some exposures above show that self-efficacy is important to be studied further. This is due to the still confusing gender differences associated with the academic self-efficacy, and the relationship between academic self-efficacy and academic achievement. Therefore, this research has two main objectives: 1) to analyze the differences of the effect of gender, years of study, and major on the academic self-efficacy and 2) to predict academic self-efficacy in determining academic achievement. Based on these objectives, the hypotheses in this research are: 1) differences of gender have a significant effect on academic self efficacy 2) differences of years of study have a significant effect on academic self efficacy, 3) differences of major have a significant effect on academic self efficacy, and 4) academic self-efficacy becomes a predictor in determining the academic achievement.

## **2. Methods**

### *2.1 Research Design*

This is a quantitative research using a survey approach. This approach is used to study the samples from populations by collecting the data in either quantitative or numerical form, attitudes, or opinions (Creswell, 2014).

### *2.2 Population and Sample*

The populations in this study are all of STKIP Singkawang (School of Teacher Training and Educational Science) students who already have an academic achievement index and are still active in face-to-face lectures in the 2019/2020 academic year. The population then sampled as many as 223 students (male 112 and female 111) using simple random sampling techniques (Slovin in Sevilla et al., 2007).

### 2.3 Instruments of Data Collection

The data are collected using the questionnaire in form of Likert scale. The questionnaire consists of two parts, namely demographic information (Gender, Year of Study, GPA) and academic self-efficacy. The instrument used is an adaptation of the instrument developed by Byrne et al (2014) and Matoti (2011). This instrument consists of 20 statements and using a four-point Likert scale, ranging from strongly disagree (1 point), disagree (2 points), agree (3 points) and strongly agree (4 points). To test the validity and reliability of the instrument to be used, the researcher first conducts a pilot study by distributing the instrument to 45 students who are not included as the research samples. The results of the pilot study show that all of the statement items are valid and reliable, with a Cronbach alpha value of .907. This means that the instrument is suitable for use in this research. Meanwhile, the academic achievement is taken from the students' grade passing average.

### 2.4 Procedure and Data Analyze

The questionnaire that has been modified and tested for its validity and reliability is then directly distributed to the research samples. After the data are collected, they are analyzed using SPSS version 23.0. To test the first research hypothesis, the data analysis technique used is the descriptive statistics (mean, standard deviation, frequency, and percentage) and univariate analysis of the General Linear Model (GLM). For the second question, the analysis technique used is simple linear regression. The level of significance for all data analyzes is 5%.

## 3. Findings

### 3.1 Difference of Academic Self-Efficacy based on Gender, Years of Study, and Major

The results of the descriptive analysis in Table 1 shows that the average academic self-efficacy of the male students (66.07) is higher than the female (65.23). The average academic self-efficacy of the fourth year students (66.74) is higher than third year (66.07) and second year (64.26). Then, the average academic self-efficacy of the students majoring in Indonesian Language and Literature Education (67.35) is higher than students majoring in Elementary School Teaching Education (66.70), Counseling (64.67), Physics (64.40), and Mathematics (63.15).

**Table 1.** Mean and SD of Academic Self Efficacy based on Gender, Years of Study, and Major

Variable		Mean	SD	Frequency	Percent
Gender	Male	66.07	7.39	112	50.2
	Female	65.23	6.72	111	49.8
Years of Study	II	64.26	7.63	74	33.2
	III	66.07	6.73	88	39.4
	IV	66.74	6.66	61	27.4
Major	Counseling	64.67	6.12	12	5.4
	Physics	64.40	8.95	10	4.5
	Mathematics	63.15	7.93	61	27.4
	Indonesian Language and Literature Education	67.35	5.55	46	20.5
	Elementary School Teaching Education	66.70	6.67	94	42.2

The univariate GLM analysis in Table 2 shows that in the gender variable, there is no significant difference between male and female students related to the academic self-efficacy, with  $F(1) = .040$  and  $p > .05$ . In the years of study, the analysis also shows that there are no significant differences between students in year II, year III and year IV related to the academic self-efficacy with the value of  $F(2) = 2.46$  and  $p > .05$ . Unlike the previous

variables, the results of the analysis of the major variable show that there are significant differences between the students majoring in BK, Physics, PBSI, Mathematics, and PGSD related to the academic self-efficacy with the value of  $F(4) = 4.86$  and  $p < .05$ .

**Table 2.** Analysis of GLM Univariate of the Difference of Academic Self-Efficacy based on Gender, Years of Study, and Major

Effect	SS	Df	MS	F	P
Gender	1.88	1	1.88	.040	.841
Years of Study	229.24	2	114.62	2.46	.088
Major	905.61	4	226.40	4.86	.001

### 3.2 Academic Self-Efficacy in Determining Academic Achievement

The results of the correlation analysis in Table 3 shows that academic self-efficacy has a significant positive relationship with the academic achievement ( $r = .800$ ,  $p < .05$ ). This illustrates that every time academic self-efficacy improve well, and it will be followed by an improvement in the academic achievement.

**Table 3.** Mean, SD, Correlation of Academic Self Efficacy and Academic Achievement

Variable	Mean	SD	r	P
Self Efficacy Academic	65.65	7.06	.800**	.000
GPA	3.12	.75		

Then, the results of simple linear regression analysis in Table 4 shows that the academic self efficacy can significantly determine academic achievement, with an F ratio = 391,877 at an alpha level of less than 0.05 with 1 and 221 degree of freedom. The academic self efficacy contributes 64% ( $B = .085$ ) to the academic achievement. The results of statistical analysis on a positive B value indicate that each one time increase in the academic self-efficacy is associated with .085 units of academic achievement

**Table 4.** Simple Linear Regression of Academic Self-Efficacy in Determining Academic Achievement

Independent Variable	B	SE B	B	r <sup>2</sup>	t	P
Self Efficacy Academic	.085	.004	.800	.64	19.796	.000
R						.800
R <sup>2</sup>						.639
F ratio						391.877
DF						1, 221
Sig of F						.000

## 4. Discussion

The first objective in this research is to analyze the influence of gender difference, years of study and major towards the academic self-efficacy. First, the results of the analysis show that male and female students do not have significant differences related to their academic self-efficacy. This means that the gender does not have a significant effect on the academic self-efficacy. This result is supported by the results of previous studies which revealed that there is no influence of gender difference on the academic self-efficacy in general (Choi, 2005). Santrock (2008) revealed that the academic self-efficacy between men and women can be different if it is based on the context of learning outcomes achieved. Male have higher academic self-efficacy for mathematics and sports, while women have higher academic self-efficacy for English subjects, reading, and social activities. Secondly, the results of the analysis also show that there are no significant differences between the

students from first until the fourth years. This shows that the difference of the years of study does not significantly affect the academic self-efficacy. These results provide an understanding that the length of study taken by the students is not necessarily in line with the increase in the academic self-efficacy. Although the average score of upper semester students is higher, it does not show a significant difference. This result is reverse to the opinion of Bandura (1997) who revealed that mastery experience is the most influential source of academic self-efficacy. It is similar with the results of the research conducted by Sachitra & Airports (2017) which revealed a significant difference between the students in the second, third, and fourth year. The Differences in the results of this study with the previous research related to years of study can broaden an understanding of the importance of experience in the academic self-efficacy. Third, the results of the analysis show that there are significant differences between the students who are majoring in Counseling, Physics, Mathematics, Indonesian Language and Literature Education, and Elementary School Teaching Education. This shows that the major differences significantly influence the academic self-efficacy. Students majoring in Indonesian Language and Literature Education have the highest academic self-efficacy, followed by Elementary School Teaching Education, Counseling, Physics, and Mathematics students. Viewed from the field of science, the social science students have higher academic self-efficacy than the exact science students. This can be caused by the level of difficulty and high learning pressure so that many students are not sure of their ability to solve learning problems. This causes the students to become worried, anxious, afraid, depressed and stressed (Bandura: 1997). Whereas, the students who are confident in their ability to solve the learning problems will always be ready to participate more in completing the learning tasks, work harder, and have longer persistence when facing difficulties than those who doubt their own abilities, encourage themselves to seek positive efforts in improving personal achievement and well-being, accelerating interest in certain problems and getting involved in activities that are loved, making difficult tasks challenging and motivated to solve them, planning challenging goals and maintaining strong commitments, continuing to fight against laziness. If they fail, they will immediately recover and reorganize themselves (Bandura, 2002).

The second objective in this study is to predict the academic self-efficacy in determining academic achievement. From the results of correlation analysis, the academic self-efficacy and academic achievement apparently have a significant relationship. This is in line with some previous studies which confirm that academic self-efficacy has a significant relationship with the academic achievement (Tenaw, 2013; Pintrich & Groot, 1990; Cheng & Chiou 2010; Klassen, 2010; Michaelides, 2008). Not only has a positive correlation, the academic self-efficacy is also a good predictor can determine the academic achievement. Some of previous research have revealed that academic self-efficacy is a predictor that can determine academic achievement (Koseoglu, 2015; Goulao, 2014; Meral et al, 2012; Kolo et al, 2017; Honicke & Broadbent, 2016; Ahmad & Safaria, 2013; Shkullaku, 2013 2013; Arbabisarjou et al, 2019; Akram & Ghazanfar, 2014; Enny & Pujara, 2019; Hassan et al, 2015).

Academic self-efficacy refers to individuals' beliefs that he/she can successfully reach the specified level on academic assignments or achieve certain academic goals (Bandura, 1997; Eccles & Wigfield, 2002; Elias & Loomis, 2002; Linenbrink & Pintrich, 2002; Schunk & Pajares, 2002). Bandura (1995) revealed that the self-efficacy makes a difference in each individual's personality, namely the difference in feeling, thinking, and acting. Academic self-efficacy is also able to influence cognitive processes and actions through the function of self-regulation so that it can change the environment (Bandura, 2001). In line with Bandura's opinion, Pajares (2002) explained that the self-efficacy is a major factor that contributes to the students' success because the self-efficacy influences the students' choices and the actions they pursue.

## 5. Conclusions

The academic self-efficacy is the most important aspect for the students to be able to master the learning materials well. There are no significant differences between male and

female students. This indicated that the gender difference does not have a significant effect on the students' academic self-efficacy. Likewise, the students who are at the top level were not significantly different from the lower level ones. Some differences occur in major side, where the students who are majoring in social science are on average higher than the exact ones. Then, the role of academic self-efficacy in determining the students' academic achievement is found to be very significant, so that it can be a good predictor.

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