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# PISMP Trainee Teachers' Level of Self-Efficacy at a Teacher Education Institute

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#### Abstract:

This study aims to describe the level of self-efficacy among semester 1 and semester 8 trainee teachers at a teacher education institute in Malaysia. In order to make the study to be more meaningful, the study also aims to determine whether there is any significant difference in self-efficacy between semester 1 trainee teachers who have undergone teacher training recently and semester 8 trainee teachers who have undergone teacher training for the past five and a half years at the institute. A total of 170 semester 1 and semester 8 trainee teachers involved in this study. The instrument used (SEGURU) for this study was the translation of Teacher Efficacy Scale. The result showed that the level of self-efficacy for semester 1 trainee teachers was at a moderately low level. While the level of self-efficacy for semester 8 trainee teachers was at a moderately high level in the range of 4.05 to 4.59 on the scale of 1 to 6. There was a significant difference in the level of self-efficacy between the semester 1 and semester 8 trainee teachers. Several steps were suggested to improve the level of trainee teachers' self-efficacy.

**Keywords:** Trainee teacher, self-efficacy, teacher education institute (IPG)

#### 1. Background of the Study

Bachelor of Teaching with Honors Program (PISMP) from the Malaysian Teacher Education Institute (IPGM) in general and at the Teacher Education Institute Technical Education Campus in particular is carried out through the design of a curriculum based on learning outcomes (outcome-based), practical and contextual in a real situation of teaching and learning practics in schools. The program is in the form of spiral and developmental, and through carefully planned learning experience according to sequence and suitability based on a wide range of experience, level of difficulty and context in each course and between courses being offered.

The overall PISMP consists of three levels according to semesters which are: a) the first level from semester 1 to semester 3; b) the second level from semester 4 to semester 6; and c) the third level from semester 7 to semester 8. The professional practice is carried out through experience that emphasizes clinical experience and guidance through school-based experience, practicum, internship, industry training, and service learning that will be implemented throughout the study in order to apply the theory in real-life situations.

# 2. Theoretical Framework

# 2.1. Self-Efficacy Theory

Self-efficacy was introduced for the first time by Bandura (1977). Bandura (1982) stated that a person with knowledge and skills is not necessarily able to accomplish a good task without the beliefs, self-referent thoughts or in other words, one's belief in self-ability which is self-efficacy.

According to Bandura (1986), each individual possesses a self-belief system that combines self-control of his or her thoughts, feelings, motivations and behavior. It refers to "the degree to which a person believes and trusts his or her ability to organize and administer groups of behavior required to deal with prospective situations" (Bandura, 1977, p 3).

Self-efficacy is important because it is used as a yardstick for the effectiveness of someone faced with the possibilities that will exist when a person performs a task (Bandura, 1982). Self-efficacy serves as a liaison between knowledge and skills with one's actions.

Bandura (1977) mentioned that someone who has a knowledge and skills is capable of performing a task in a state of stress and distress. However, he added that a more challenging task requires a lot more effort. Therefore, for achieving a tough goal, the possibility of one failure is high. This situation will end in disappointment, loss of self-confidence and reduce motivation to work effectively.

In contrast, for individual who has a high level of self-efficacy, performing a difficult task will have the opposite effect. The difficult situation will motivate the individual to improve his or her actions. This is because he acts based on his self-satisfaction on achieving a goal (Bandura, 1977). Individual with high self-efficacy, more hardworking and able to work long hours, compared to individual with lower self-efficacy (Wood & Bandura, 1989).

Based on the Self-efficacy Model of Albert Bandura (1982; 1986; 1997) and (Hilmi, 2006), there are three self-referent thoughts elements related to the self-efficacy. Element (1) is the expectation of self-perceived ability through reference source of self-feedback and situations. The reference source of self-feedback and situations include: (a) self-possession of the knowledge, skills and experience; in the context of trainee teachers is the application of knowledge and skills that have been applied through practical training and internship in semester 5, 6, 7 and 8; (b) the environmental experience derived from the model; for example through the guidance counselor at the school during their practical training; (c) feedback from others, such as verbal comments and feedback from lecturers, teachers, counselors and principals during their practicum and internship; and (d) one's physiological level, such as the level of concern in a specific situation; for example in teaching and learning in the classroom.

Element (2) is also the expectation of self-ability namely the belief in self-ability in executing a particular task. It is achieved after a person perceived on the expectations of self-ability and the expected results. Element (3) is the expected result. According to Bandura (1986), if the expectations of self-ability are the catalyst between the individual and its own actions; then the expected results are the catalyst between individual actions and its results (goal). This means that if the expectations of self-ability is high, then the expected results are also high which leads to a positive effect on the achievement of individual goals.

In the context of this study, element (1) produced element (2) is categorized as personal teaching efficacy. Whereas, element (2) and element (3) sparked of what is categorized as the efficacy of teaching. According to Gibson and Dembo (1984), personal teaching efficacy refers to the belief in the influence of the teacher's abilities and teaching on student learning. Whereas, the results of teaching efficacy are limited by the general and external influences on the outcomes of the teaching and the learning of students in the classroom.

Tschannen-Moran & Woolfolk Hoy (2001) advocated that teacher self-efficacy refers to the teacher assessment of his or her own ability to achieve specified learning objectives even among problematic and unmotivated students. The belief of teacher on self-efficacy is related to the ability of the teacher to prepare teaching and the accountability for his or her students, including students with learning difficulties (Dembo & Gibson, 1985).

# 3. Purpose of the Study

Based on the model proposed by Bandura (1982; 1986; 1997) and (Hilmi, 2006), the study is intended to look at the extent of teacher training that undergone by semester 8 trainee teachers at the institute has affected the level of expectations of their abilities. In addition, this study attempts to determine whether there is any difference in the level of self-efficacy between semester 8 trainee teachers and semester 1 trainee teachers who were in the initial stage of their training that never gone through any practicum and internship. This justification based on past studies which consistently showed strong relationship between teacher self-efficacy with reactions of students learning and achievement of learning outcomes (Tschannen-Moran & Woolfolk Hoy, 2001).

#### 3.1. Specific Objectives

The specific objectives of this study are:

- To describe the level of self-efficacy among semester 1 trainee teachers at the institute.
- To describe the level of self-efficacy among semester 8 trainee teachers at the institute.
- To determine whether there is any difference in the level of self-efficacy between semester 1 and semester 8 trainee teachers at the institute.

# 3.2. Research Questions and Hypothesis

Based on the first and second objectives of the study, two research questions are formed:

- What is the level and the shape of the distribution of self-efficacy among semester 1 trainee teachers as measured by the Teacher Self-efficacy Scale (SEGURU)?
- What is the level and the shape of the distribution of self-efficacy among semester 8 trainee teachers as measured by the Teacher Self-efficacy Scale (SEGURU)?

In order to meet the third objective, the following hypothesis is established:

• H<sub>1</sub> There is a significant difference in the level of self-efficacy between semester 1 and semester 8 trainee teachers as measured by the Teacher Self-efficacy Scale (SEGURU)

# 4. Research Methodology

# 4.1. Research Design

The research design was a descriptive design utilising indicators such as mean, standard deviation and percentage. The variables involved were the existing attribute variables which were not be manipulated by the researcher. Therefore, the expost facto research design was used to test the research hypothesis that was formed.

# 4.2. Sample

This study involved a total of 87 semester 1 trainee teachers and 83 semester 8 trainee teachers. In this study, the sample that consisted of 170 semester 1 and semester 8 trainee teachers at the institute has met and exceeded the sample size of the study. The number of respondents (n = 170) was calculated based on the GPower program with  $\alpha$  = .05 (one-tailed), effect size = 0.66 (moderate) and actual power (1 -  $\beta$ ) of the inferential statistics test power was 0.99.

#### 4.3. Instrumentation

The instrument in this study, namely Teacher Self-efficacy Scale (SEGURU or Skala Efikasi Swadiri Guru), was the translation of the Teacher Efficacy Scale by Gibson and Dembo (1984), and Woolfolk and Hoy (1990). The questionnaire also took into account the studies made by Kushner (1993), which showed that the content validity was consistent for the purpose of use among trainee teachers.

Gibson and Dembo (1984) divided the teacher efficacy into two dimensions which are personal efficacy and teaching efficacy. Personal efficacy refers to the belief in the influence of the teacher's ability and teaching skills to the students. Where as, the teacher efficacy which limits by the general and external influences on the teaching and learning of students in the classroom is known as the teaching efficacy.

SEGURU questionnaire containing 22 items: 13 items for personal efficacy and 9 items for teaching efficacy. A pilot study was conducted for SEGURU instrument among 30 semester 3 and semester 5 trainee teachers at the Teacher Education Institute Tun Hussein Onn Campus, Batu Pahat. The data collected were analysed using SPSS 14.0 software to test for the reliability of SEGURU instrument. Cronbach's alpha reliability coefficient was obtained to estimate the reliability of the instrument. The level of reliability coefficient was consistent, exceeding .90. Ideally the value of Cronbach's alpha coefficient exceeding .70 are considered good for a measurement scale (Mohamed Othman, 2001; Pallent, 2001).

The value of alpha reliability coefficient for the whole SEGURU was .92. Whereas, the values of alpha reliability coefficients for the subscale of personal efficacy and teaching efficacy were .92 and .80 respectively (Table 1). The values of alpha indicated that SEGURU has a high level of reliability coefficient which was greater than .90.

SEGURU	Personal Efficacy	Teaching Efficacy	n
Measurement	Subscale	Subscale	
.92	.92	.80	170

Table 1: Cronbach's Alpha for SEGURU Measurement Scale and Subscales

# 4.4. Data Analysis

The frequency, percentage, mean score, and standard deviation were calculated. The t-test was used to determine significant difference in self-efficacy between the semester 1 and semester 8 trainee teachers. The data obtained through the questionnaires were presented in the tables along with the interpretation.

#### 5. Findings

This section is divided into two parts. The first part is to describe the demographic characteristics of respondents using descriptive statistics. In this study, the population covered all the involved sample. Inferential statistics were used to determine the extent of the data obtained from the sample of the study were significant based on the population. The second part is the respondents' responses to the questionnaire of SEGURU. This section answers the research questions and the hypothesis.

# 5.1. Demograhic Characteristics of Respondents

A total of 170 respondents (Table 2) were involved in this study. For semester 1, there were 87 trainee teachers (51.2%) and for semester 8, there were 83 trainee teachers (48.8%).

Semester	Frequency	Percentage
1	87	51.2
8	83	48.8

Total	170	100

Table 2: Frequency of Respondents by Semester

# 5.2. Self-efficacy

Analysis of the data (Table 3) showed that respondents' mean score for self-efficacy was obtained by summing the average score for each of the 22 items in Teacher Self-efficacy Scale (SEGURU). The results showed that semester 1 respondents' mean score for self-efficacy was 89.62 with a standard deviation of 10.81. The minimum score for self-efficacy was 68 and the maximum score was 172. Whereas, the mean score for semester 8 respondents' self-efficacy was 96.89 with a standard deviation of 13.19. The minimum score was 76 and the maximum score was 132.

Semester	Frequency	Minimum	Maximum	Mean	Standard Deviation
1	87	68 (3.09)	172 (7.82)	89.62 (4.07)	10.81 (.49)
8	83	76 (3.45)	132 (6.00)	96.89 (4.40)	13.19 (.60)

Table 3: Mean Score and Standard Deviation for Respondents' Self-Efficacy by Semester

For comparison purposes, the mean scores were divided into three categories, namely low score (mean average below 4.04), moderate (mean average between 4.05 and 4.59) and high (mean average above 4.60). Referring to Table 4, the results showed a total of 42 semester 1 trainee teachers were at a low level of self-efficacy, 40 respondents at moderate level and 5 respondents at high level.

Whereas in Table 5, the results showed a total of 26 semester 8 trainee teachers were at low level of self-efficacy, 33 respondents at moderate level and 24 respondents at high level. Therefore, the data indicated semester 1 trainee teachers' self-efficacy was in the range of low and moderate level. Whereas, the semester 8 trainee teachers' self-efficacy was in the range of moderate and high level.

Level of Self-efficacy	Frequency	Percentage
Low	42	48.3
Moderate	40	46.0
High	5	5.7
Total	83	100

Table 4: Distribution of Frequency and Percentage for Self-Efficacy by Low, Moderate and High Levels among Semester 1 Respondents

Level of Self-efficacy	Frequency	Percentage
Low	26	31.3
Moderate	33	39.8
High	24	28.9
Total	83	100

Table 5: Distribution of Frequency and Percentage for Self-Efficacy by Low, Moderate and High Levels among Semester 8 Respondents

Next, to answer  $H_1$ , there was a significant difference in the level of self-efficacy between semester 1 and semester 8 trainee teachers based on the Teacher Self-efficacy Scale (SEGURU). The mean score of self-efficacy for semester 1 trainee teachers differed significantly from semester 8 trainee teachers. For semester 1 trainee teachers, M = 89.62, SD = 10.81 and for semester 8 trainee teachers, M = 96.89, SD = 13.19 (Table 3).

On a scale of 1 to 6, the mean among semester 1 trainee teachers' self-efficacy was 4.07 and the mean among semester 8 trainee teachers' self-efficacy was 4.40. The analysis of the t-Test indicated that the mean difference in self-efficacy was significant [t (158.616) = -3.919, p <.05] as shown in Table 6.

Variable		Levene's Test for Equality of Variance		t-Test for Equality of Mean	
		F	Sig.	t	df
Self-efficacy	Variance Inequality	4.086	.045	-3.919	158.616

Table 6: t-Test for Semester 1 and Semester 8 Respondents' Self-Efficacy
\* P <.05 (Two-Tailed)

The effect size calculation, eta squared whicht ranged from 0 to 1 indicated that the magnitude of the difference between groups was not due to chance, showed how the dependent variable (self-efficacy) was explained by the independent variables (groups of semester 1 and semester 8 trainee teachers) was .08, that was in the range of moderate effect size

(Pallant, 2001). This value indicated that 8% difference in self-efficacy can be explained by differences in semester of training of trainee teachers at the institute.

Comparison of the mean scores for two subscales of self-efficacy showed that the level of personal efficacy subscale for semester 1 trainee teachers has the highest mean score, M = 54.26, SD = 6.38 for the 13 items on the scale of 1 to 6. The minimum score was 40 and the maximum score was 76. Whereas for the teaching efficacy subscale, M = 35.35, SD = 5.25 for the 9 items on the scale of 1 to 6. The minimum score was 23 and the maximum score was 51 (Table 7).

Subscale	Frequency	Minimum	Maximum	Mean	Standard Deviation
Personal efficacy	87	40 (3.08)	76 (5.85)	54.26 (4.17)	6.38 (.49)
Teaching efficacy	87	23 (2.56)	51 (5.67)	35.35 (3.92)	5.25 (.58)

Table 7: Mean Score and Standard Deviation of Self-Efficacy Subscales for Semester 1 Respondents

Analysis indicated that for personal efficacy subscale, 6.9% of semester 1 trainee teachers have a high level of personal efficacy, 51.7% at moderate level and 41.4% at the low level (Table 8). Whereas for the teaching efficacy subscale, 5.7% at high level, 40.2% at moderate level and 54.0% at low level (Table 9).

Level of Personal Efficacy	Frequency	Percentage
Low	36	41.4
Moderate	45	51.7
High	6	6.9
Total	87	100

Table 8: Distribution of Frequency and Percentage for Personal Efficacy Subscale by Low, Moderate and High Levels among Semester 1 Respondents

Level of Teaching Efficacy	Frequency	Percentage
Low	47	54.0
Moderate	35	40.2
High	5	5.7
Total	87	100

Table 9: Distribution of Frequency and Percentage for Teaching Efficacy Subscale by Low, Moderate and High Levels among Semester 1 Respondents

Table 10 shows the comparative analysis of the mean score and standard deviation for self-efficacy subscales for semester 8 trainee teachers. The personal efficacy was also the highest for semester 8 trainee teachers with M = 59.39, SD = 8.23 for the 13 items on the scale of 1 to 6. The minimum score was 46 and the maximum score was 78. Whereas for the teaching efficacy, M = 37.49, SD = 6.51 for the 9 items in the scale of 1 to 6. The minimum score was 25 and the maximum score was 54.

Subscale	Frequency	Minimum	Maximum	Mean	Standard Deviation
Personal efficacy	83	46 (3.54)	78 (6.00)	59.39 (4.56)	8.23 (.63)
Teaching efficacy	83	25 (2.78)	54 (6.00)	37.49 (4.16)	6.51 (.72)

Table 10: Mean Score and Standard Deviation of Self-Efficacy Subscales for Semester 8 Respondents

Analysis indicated that for personal efficacy subscale, 41.0% of semester 8 trainee teachers have a high level of personal efficacy, 37.3% at moderate level and 21.7% at the low level (Table 11). Whereas for teaching efficacy subscale, 22.9% at high level, 22.9% at moderate level and 54.2% at low level (Tables 12).

Level of Personal Efficacy	Frequency	Percentage
Low	18	21.7
Moderate	31	37.3
High	34	41.0
Total	83	100

Table 11: Distribution of Frequency and Percentage for Personal Efficacy Subscale by Low, Moderate and High Levels among Semester 8 Respondents

Level of Teaching Efficacy	Frequency	Percentage	
Low	45	54.2	
Moderate	19	22.9	
High	19	22.9	
Total	83	100	

Table 12: Distribution of Frequency and Percentage for Teaching Efficacy Subscale by Low, Moderate and High Levels among Semester 8 Respondents

Comparison of the mean for both semester 1 and semester 8 for personal efficacy subscale showed that the mean score of semester 8 trainee teachers, M = 59.39, SD = 8.23 was higher than the mean score of the semester 1 trainee teachers, M = 54.26, SD = 6.38. Minimum score was 46 and the maximum score was 78 for the semester 8 trainee teachers. Whereas for the semester 1 trainee teachers, the minimum score was 40 and the maximum score was 76 for personal efficacy subscale with a total of 13 items on the scale of 1 to 6 (Table 13).

Semester	Frequency	Minimum	Maximum	Mean	Standard Deviation
1	87	40 (3.08)	76 (5.85)	54.26 (4.17)	6.38 (.49)
8	83	46 (3.54)	78 (6.00)	59.39 (4.56)	8.23 (.63)

Table 13: Mean Score and Standard Deviation for Respondents' Personal Efficacy by Semester

Variable		Levene's Test for		t-Test for Equality	
		Equality of Variance		of Mean	
		F	Sig.	t	df
Personal efficacy	Variance Inequality	5.883	.016	-4.528	154.529

Table 14: T-Test for Semester 1 And Semester 8 Respondents' Personal Efficacy Subscale
\* P <.05 (Two-Tailed)

On the scale of 1 to 6, the mean among semester 1 trainee teachers' personal efficacy was 4.17 and the mean among semester 8 trainee teachers' personal efficacy was 4.56. As shown in Table 14, the mean difference in personal efficacy was significant [t (154.529) = -4.528, p <.05].

The effect size calculation, eta squared which ranged from 0 to 1 indicated that the magnitude of the difference between groups was not due to chance, showed how the dependent variable (personal efficacy) was explained by the independent variables (groups of semester 1 and semester 8 trainee teachers) was .12, that was in the range of moderate effect size (Pallant, 2001). This value indicated that 12% difference in personal efficacy can be explained by differences in semester of training of trainee teachers at the institute.

Semester	Frequency	Minimum	Maximum	Mean	Standard Deviation
1	87	23 (2.56)	51 (5.67)	35.35 (3.92)	5.25 (.58)
8	83	25 (2.78)	54 (6.00)	37.49 (4.16)	6.51 (.72)

Table 15: Mean Score and Standard Deviation for Respondents' Teaching Efficacy by Semester

Comparison of the mean for both semester 1 and semester 8 teaching efficacy subscale showed that the mean score of semester 8 trainee teachers, M = 37.49, SD = 6.51 was higher than the mean score of the semester 1 trainee teachers, M = 35.35, SD = 5.25. The minimum score was 25 and the maximum score was 54 for the semester 8 trainee teachers. Whereas for semester 1 trainee teachers, the minimum score was 23 and the maximum score was 51 for teaching efficacy subscale with a total of 9 items on the scale of 1 to 6 (Table 15).

Variable		Levene's Test for Equality of Variance		t-Test for Equality of Mean	
		F	Sig.	t	df
Teaching efficacy	Variance Inequality	3.761	.054	-2.349	157.576

Table 16: T-Test for Semester 1 and Semester 8 Respondents' Teaching Efficacy Subscale \*P <.05 (Two-Tailed)

On the scale of 1 to 6, the mean among semester 1 trainee teachers' teaching efficacy was 3.92 and the mean among semester 8 trainee teachers' teaching efficacy was 4.16. As shown in Table 16, the mean difference in teaching efficacy was significant [t (157.576) = -2.349, p <.05].

The effect size calculation, eta squared which ranged from 0 to 1 indicated that the magnitude of the difference between groups was not due to chance, showed how the dependent variable (teaching efficacy) was explained by the independent variables (groups of semester 1 and semester 8 trainee teachers) was .03, that was in the range of moderate effect size (Pallant, 2001). This value indicated that a 3% difference in teaching efficacy can be explained by differences in semester of training of trainee teachers at the institute.

#### 6. Discussion

The results showed that the semester 8 trainee teachers self-efficacy was at a moderately high level in the range of 4.40 and the semester 1 trainee teachers self-efficacy was at a moderately low level in the range of 4.07 on a Likert scale of 1 to 6, where a low score (mean average below 4.04), moderate (mean average between 4.05 and 4.59) and high (mean average above 4.60). There was a significant difference in the level of self-efficacy between semester 1 and semester 8 trainee teachers.

Similarly, for the results of differences in the level of self-efficacy subscales, the mean scores for both personal efficacy and teaching efficacy of semester 8 trainee teachers were at a higher level than the semester 1 trainee teachers. There were significant differences in the level of personal efficacy and teaching efficacy among semester 1 and semester 8 trainee teachers.

However, the differences of mean scores for the self-efficacy subscales showed that the mean scores of teaching efficacy were lower than the mean scores of personal efficacy for both semester 1 trainee teachers and semester 8 trainee teachers. Although the analysis showed the mean score for level of teaching efficacy of semester 8 trainee teachers was higher than the mean score for the level of teaching efficacy of semester 1 trainee teachers, nevertheless, relatively the mean score for the level of teaching efficacy of semester 8 trainee teachers was lower than the mean score for level of their personal efficacy. These findings indicated that efforts should be increased to develop self-confidence on the ability of teachers in teaching to strengthen the practice of classroom management, teaching strategies and communication with students in the classroom among trainee teachers at the institute.

The results showed there was a significant difference in self-efficacy between the semester 1 and semester 8 trainee teachers. These findings supported the researchers' theoretical framework for self-efficacy which was established through previous studies. Woolfolk-Hoy and Burke-Spero (2005) described that the mastery experience gained by trainee teachers during their practicum influenced the development of their self-efficacy. Besides that, the field experience provided an opportunity for the trainee teachers to evaluate their own abilities and capabilities. Observation of experienced teachers during practicum in schools was an effective tool and experienced teachers became a role model in promoting the development of self-efficacy among semester 8 trainee teachers compared to semester 1 trainee teachers who have never undergone any practicum. Bandura (1977) has also identified the importance of feedback and environmental support in the formation of self-efficacy. In the context of practicum, feedback and support from supervising lectures and supervising teachers as well as school administrators play an important role in the formation of the self-efficacy of semester 8 trainee teachers which of course have preceeded their fellow semester 1 trainee teachers.

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