

# Mothers' Self-Efficacy and Its Effect on Adolescents' Academic Achievement

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## ABSTRACT

Mothers as one of parents has important influence on children schooling. Their self-efficacy is considered to be a predictor to such influence. The objectives of this study are to examine differences of mothers' self-efficacy that exist based on their educational level and the effect of mothers' self-efficacy on adolescents' academic achievement. An ex post facto design was chosen to achieve the objectives. 104 eleventh graders and their mothers participated as respondents. In addition to adolescents' learning score records, a 24 valid and reliable item questionnaire was administrated to mothers asking them to rate their self-efficacy on influencing their adolescents' academic achievement. An ANOVA test and simple linear regression were utilized to analyze the collected data. The study concluded that self-efficacy has positive relationship with education level and mother's self-efficacy has positive effect on adolescents' academic achievement.

**Keywords:** *mother's self-efficacy, academic achievement, high school, adolescent*

## 1. INTRODUCTION

Students' academic achievement usually is pictured by their learning outcomes. In Bloom's perspective the learning outcome was composed of cognitive, affective and psychomotor domain [1]. In high school settings, track records of adolescent students' academic achievement is provided by teachers in report card or book form. The results of student learning on all of subjects pursuing in each semester is shown in the form of the scores listed on the card. The higher the scores are achieved in all subjects by them, the higher their academic achievement are stated. Unfortunately, not all adolescents are able to achieve high academic achievement due to various factors. Some of them are motivation, learning attitude, learning style, self-efficacy, teacher teaching styles, level difficulties of subject matters, and family related socioeconomic, parental education, or parental attitude [2, 3, 4]. Many variables contribute to adolescents' academic achievement widely studied, yet parental variable is always treated as important issues and interest as stated by Troutman [5]. Since parents are labeled as the first and main educators in term of their socially intense relationship with children from the beginning, all variables associated with parents have to examine partly or comprehensively. For example, parental age had affected children learning achievement [6] and there was interactive influences of parents' educational involvement and children's personal characteristics in predicting school achievement [7]. Greenwood &

Hickman [8] summarized contribution of parental involvement in children education such as higher academic achievement, school attendance, and positive attitudes and behavior. A finding of Izzo, Weissberg, Kaspro, and Fendrich [9] showed that when parents and schools collaborate effectively, students could behave and showed better achievement at school.

This study limits its scope only on roles of parents in children education, particularly mothers since they culturally had more responsibility in care giving and educating children in a number of aspects, such as academic, personal/social, morality, ethics, aesthetic, communication, self-esteem, or self-confidence. A study of Yosef, Hasmalena, & Sucipto [10] showed self-efficacy of mothers of elementary children in elementary education involvement is slightly greater than fathers in six types involvement. This finding suggests mother have important contribution in children schooling. However, Gallop poll in 2020 initiated a survey of questioning the influence of father and mother in family live [11]. Finding of the survey gave evidence more family members recognized to have shown appreciation to their mothers than to their fathers (81% versus 72%), yet slightly fewer mothers than fathers feel that their families appreciate them enough (85% compared to 90%). This survey implied that the strength of appreciation to mothers was not adequate enough by referring to their responsibility in household obligation, educating children, or even for working mothers.

Mother positive influence on adolescents' development has been obviously recognized. Their influence on academic achievement will be interesting if addressed to their self-efficacy, in this context, the beliefs about being able to handle specific issues and being able to influence their adolescents' in a way that facilitate the children' learning [12]. Mother efficacy in turn will be beneficial in developing adolescents' efficacy since for adolescents' mothers to some degrees are still faced as role models [13]. Research of Weiser and Riggio [14] justified this assumption when they found family background and self-efficacy influence academic outcomes and family background also impacts self-efficacy development.

Research by Schunk and Pajares [15] showed that individuals successful in taking education was closely related to self-efficacy and their mother personality had influence on it. In thi context, those mothers who have adequate self-efficacy presumably will give their contribution to children' self-efficacy as well [16]. Mothers' self-efficacy will be a source of their children' self-efficacy. In other expression, the higher mothers have self-efficacy level the better their children have self-efficacy also. Since self-efficacy was so important, many researchers study these issues. Abarashi et al [17] studied mothers' self-efficacy as determining factor in healthy mother-child interaction. This proves that there is a relationship between parental beliefs in the seriousness of being involved in the relationship because of self-efficacy.

Studying the relationship between education level of mothers and their self-efficacy and its effect on children academic achievement is always relevant not only because mothers as individual are dynamic persons but also their lovely adolescents facing critical and great challenging live in their development that need their attention and accompaniment. So, developing a better understanding of mothers' self-efficacy as well as the role of mothers' self-efficacy in adolescent education would facilitate schools to develop and implement more effective strategies to support parental involvement in education.

## 2. METHODS

104 eleventh graders of a public high school in Palembang of South Sumatera Province Capital, and their mothers participated in this study. 48 among students were boys and 56 were girls. All adolescents had biological relationship with their mothers and fathers. They were selected using simple random sampling method. In term of education level, the mothers were 37 higher education graduates, 44 high school graduates, and 23 middle school graduates. Age average of respondents was 45.7 years (the youngest 35 years, the oldest 60 years,  $SD=7.78$ ). 67% of the respondents were housewife and the rest worked

as teachers (9%), public sectors 10%, and others (14%).

Accompanied with informed consent, Parental-self Efficacy Scale (PSES) was developed to measure mothers' self-efficacy by referring Bandura's concept of self-efficacy [12]. It had six aspects in which each aspect consisted of 4 items. The six aspects of parental-self efficacy were (a) make adolescents to perceive school was valuable, (b) make adolescents to hard work for completing to academic assignment, (c) make adolescents to avoid unproductive behavior in school, (d) helping adolescents to reach optimal achievement, (e) make adolescents enjoy school activities, and (f) make adolescents to hard working for high learning achievement. The 24 items of requiring parents to rate their self-efficacy on 1-100 in which 1 was strongly not believe to do and 100 strongly believe to do. The scale had been tested for its validity and reliability. The validity coefficients of items were between .64-.89. Meanwhile, reliability value in Cronbach's alpha was .759 which was categorized as highly reliable (.61-.80) [18]. Both value indicated the instrument was adequate to measure mother efficacy. Meanwhile, data of adolescents' academic achievement were obtained from academic achievement document recorded by classroom teachers. They were the results of midterm examination of the first semester academic year 2019/2020. The teachers shared the data confidentially for research purposes.

This study utilized ex-post facto design. Upon validity and reliability of PSES tested and revised, it was printed and administered to mothers brought home by their children. All parents assigned as samples returned the PSES in sealed envelopes up to 3 days later. Classroom teachers were requested for supplying students' achievement data. Data of mothers' efficacy and students' achievement data finally were calculated to test research hypotheses that there is relationship between mothers' self-efficacy and education level and mothers' self-efficacy had positive effect on adolescents' academic achievement. ANOVA test and simple linear regression were utilized to analyze obtained data.

## 3. RESULTS AND DISCUSSION

### 3.1. Results

First analysis will be addressed to compare mean scores of mothers' self-efficacy on behalf of their education level categories, e.g. higher education graduate, high school graduate, and middle school graduate. It had been hypothesized that mothers' self-efficacy was different viewed from their education level. For such purpose, following is displayed mothers' self-efficacy data on Table 1 and 2 and ANOVA test of mothers' self-efficacy on Table 3.

Table 1. Description of Mothers' Self-Efficacy

No	Aspects	Higher Education Graduate (N = 37)		High School Graduate (N= 44)		Middle School Graduates (N= 23)	
		Mean	SD	Mean	SD	Mean	SD
1	Make adolescent to perceive school was valuable.	83.6	10.2	80.1	22.9	61.4	12.4
2	Make adolescent to hard work for completing to academic assignment.	82.8	9	77	11.7	59.7	2.7
3	Make adolescent to avoid unproductive behavior in school.	83.3	9.1	78.1	4.2	62.8	11.2
4	Help adolescent to reach optimal achievement	82.5	9.5	77.3	11.3	59.8	11.9
5	Make adolescent enjoy school activities.	77.8	11.1	76.2	11.1	58.9	11.2
6	Show hard working to influence learning achievement	83	10.1	77.3	11	59.4	12.2
Total Mean		83.04		77.66		60.33	
Standard Error		1.588		1.569		2.327	
Upper Bound		86.26		80.83		65.15	
Lower Bound		79.82		74.50		55.50	
Minimum		60		60		44	
Maximum		100		100		85	

Mean scores of mothers' self-efficacy categories on Table 1 seems different. To test whether their differences were significant, a simple ANOVA test was conducted. Table 2 displays ANOVA test results.

Table 2. ANOVA test of Mothers' Self-Efficacy

Self-Efficacy	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	7596.075	2	3798.038	35.658	<.001
Within Groups	10757.813	101	106.513		
Total	18353.888	103			

Based on the output of ANOVA test, the test is significant (F= 35.658 and significance value  $p < .001$ ). Significance value of mothers' self-efficacy is  $p < .001$  and because  $p < .001$  is  $p < 0.05$ , it could be concluded that the three groups of mothers' self-efficacy were different significantly. To look at the profile of student academic achievement in detail, on Table 3 below is

displayed such data which indicates the three groups are at first glance not different.

Table 3. Description of adolescents' Academic Achievement

Student Academic Achievement relating to Mother Education Level	N	Mean	Std. Deviation	95% Confidence Interval for Mean				
				Std. Error	Lower Bound	Upper Bound	Minimum	Maximum
Higher Ed.	37	74.38	4.400	0.723	72.911	75.845	71.3	90.5
High School Ed.	44	74.72	3.562	0.537	73.635	75.801	71.2	85.7
Middle School Ed.	23	72.97	2.238	0.467	72.002	73.937	70.1	81.8
Total	104	74.21	3.688	0.362	73.494	74.928	70.1	90.5

To prove variance difference existed among three groups, a test of homogeneity of student academic variances was done. The test showed that value of Levene statistic 3.730 and value significance was .027. This value is  $> p .05$ , confirming the score variances of three groups were homogeneous.

The second analysis is intended to answer the hypotheses that mothers' self-efficacy has significant effect on adolescents' academic achievement. The researchers firstly went through a prerequisite test. It is a required procedure prior to test for normality. The Kolmogorov-Smirnov test was utilized to test data normality. A calculating of the normality was aided by SPSS Version 26 for Windows. The result of the normality test showed that the significant value reached .167, which indicated that the data were normally distributed. It surpassed the requirement since the variable had a significant value of significant  $> .1$ . Meanwhile, the second requirement before testing the hypothesis was linearity test. The obtained significance value of linearity test was .355,  $> .1$ . So, it can be concluded that there is a linear relationship between the mother efficacy and adolescents' achievement.

To make sure whether regression coefficient is significant, a hypothesis test is done by comparing Y value to probability value of .05. Table 4 displays the result of hypothesis test. Based on the SPSS output, it is obtained that significant value is  $< .001$ . Since it is less than probability value of .05, it can be concluded that  $H_0$  is rejected and  $H_a$  is accepted.

Table 4. Coefficients<sup>a</sup> Mothers' Self-Efficacy

Model	Unstandardized B	Coefficients Std. Error	Unstandardized Coefficients Beta	t	Sig.
1 (Constant)	62.835	1.783		35.234	<.001

Mothers' Self-Efficacy	.150	.023	.540	6.475	<.001
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a. Dependent Variable: Children' Academic Achievement

Based on data in Table 4, a linear regression formula  $Y = a + bX$  of mother's self-efficacy was  $Y = 62.835 + 0.150X$ . It suggested that mothers' self-efficacy has significant effect adolescents' academic achievement. To examine the predictive value of mothers' self-efficacy in predicting adolescents' academic achievement, a simple regression model is established. Based on calculation as presented on Table 5 below, the value of R Square reached .291. This value means the effect of mothers' self-efficacy as independent variable to adolescents' academic achievement was 29.1 or self-efficacy of mothers only contribute as many as 29.1%. The other 78.9% would be shared by other variables and was not the focus of the current study.

Table 5. Model Summary of Mothers's self-Efficacy

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.540 <sup>a</sup>	.291	.284	3.11950

a. Predictor: (Constant), Mothers' Self-Efficacy

### 3.2. Discussion

Self-efficacy has a regulatory function in different motherhood domain or context. For a mother, her specific self-efficacy may relate to care giving, educating children, domestic violence, or working mother. The first finding of this study revealed that mothers who are graduates of higher education tend to have higher self-efficacy compared to graduates of high school and middle school level. The trend is also founded in high school graduate mothers compared to their counterpart of middle school graduate mothers. In other words, the higher the mothers' education level has the higher they have self-efficacy. In term of mothers' confidence to support their adolescents' learning as the main focus of this research e.g. make children to perceive school was valuable, complete academic assignment, avoid unproductive behavior, reach optimal achievement, enjoy school activities, and hard working for high learning achievement, it is obvious that all of higher education graduate mothers' mean scores are above their counterparts. However, compared to second group mothers the difference is rather slight. An interesting part of the listed data which suggesting the second group of mothers' mean score is higher than the first and the third group is in fifth aspect, e.g. "Make adolescents enjoy school activities". Although the difference is small, it could have some possible meaning. For instance, higher education graduate mothers expect their children to

pursue at least similar education level as theirs. It is not surprising if they ask children to have serious learning behavior more than high and middle school graduate mothers. An example is given by Abuya et al [19] to support this logic. They implied that children's positive perceptions of achievement were linked to their mothers' positive beliefs and expectations. Those group mothers tend to have high expectation to their adolescent since pursuing higher education will be beneficial for children future live. In vise versa, the second group mothers please their adolescents to enjoy school activities probably relating to their past high schooling experience in which they enjoyed adolescent age and do not have higher education experience that are more challenging.

The second noticeable finding of this current study indicating the influence of mothers' self-efficacy supports some related previous studies in wider context. Part of Coleman and Karakkter' research finding [20] suggested higher mother self-efficacy was observed in mothers of less emotional and more sociable children, and among mothers who were better educated. Some researches arrived in similar conclusion although others are disagreed. Hosseinzdeh, Niknami, & Hidarnia [21] who examined the significant positive effects of mothers' self-efficacy on children's physical activity are in harmony to the results of current study. Meanwhile, Pandžić, Vrselja, & Merkaš [22] found different finding. They found no evidence for the direct effect of maternal self-efficacy on adolescent risky and antisocial behavior.

A surprised finding of the present study based on simple linear regression calculation is the mothers' self-efficacy contribution to children that only reaches 29.1%. It implies that many other variables which should have been attention, such as parent level of education, parenting style, and number of children in family as studied by Theresya, Latifah, & Hernawati [23]. Important issues regarding this finding will also be addressed to age differences among adolescent children and younger children. Specifically, do mothers' self-efficacy have significant role in adolescents' academic matter compared to younger students need? Some researches had tried to answer this question. Theoretically, Havighurst' point of view [24; 25]] can be referred to explain this issue as he stated the development tasks of the two age groups are different. As development task of adolescents are more characterized to be independent persons and decreasing their attachment to parents, it is presumably the contribution of mothers' self-efficacy is not significant compared to young children.

In wider perspective, it can be contextualized that all of treatment given by mothers to children for their positive development are education. To do so, mothers should have self-efficacy that enable them to educate their children effectively. Of course, mothers'

self-efficacy was not only connected to children learning but also other aspects of children life. Their general self-efficacy will relate to any aspects of children development. For example, previous study of Secer, Ogelman, and Onder [26] found a relationship between mother efficacy and children behavior in which as the self-efficacy perception scores of the mothers increased, the aggression, exclusion, fearful-anxiety, hyperactivity and peer victimization levels of children decreased. The finding wants to show mothers who feel confidently of doing something to children may change their negative behavior to be more positive.

This study revealed that mother's self-efficacy has positive effect on student academic achievement as proved by learning outcomes. However, it has some limitation in terms of methodology utilized. First, the number of respondents is small so it needs careful consideration to generalize the findings. Second, children academic achievement data obtained from regular examination done by subject teachers are considered more objective than data obtained from mothers' self-efficacy questionnaire using self-reporting model that tend to be subjective. Third, this study was focusing on single variable of mother's self-efficacy which only gives a part of wide perspectives on children academic achievement. As part of parenthood, fathers' self-efficacy is predicted to have significant contribution to children academic achievement. Further research needs to be done particularly by increasing sample size and number of schools so that the exact effect can be established. It is also suggested to other research to use other valid and reliable instruments to measure mothers' self-efficacy. Finally, further research is recommended to compass more factors influencing to children academic achievement such as comparing fathers' self-efficacy since the result only informing 29.1% of mothers' self-efficacy contribution.

#### 4. CONCLUSION

There are many variables that affect the adolescents' academic achievement. Mothers' self-efficacy is one of the important variables and their possession are influence by level of education. Mothers who have higher education degree tends to have more self-efficacy than their lower education degree counterparts. Using simple regression techniques, a positive relationship is found between mothers' self-efficacy and adolescents' academic achievement. Although the influence of mothers' self-efficacy to such achievement is justified, however its contribution was not dominant. Other variable of the mothers should be considered in order to understand more wisely the association between mothers as parents and their adolescents.

#### ACKNOWLEDGMENT

This project was supported by Sriwijaya University and facilitated by Public High School 11, Palembang City, South Sumatera Province, Indonesia.

#### AUTHORS' CONTRIBUTIONS

Yosef: study design, data analysis, and academic writing; Novi Kharisma: measuring variables, data entry in SPSS, and analysis of data.

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