

Achievement Goal and Homework Behavior: Mediator Effects of Achievement Emotion

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Abstract

This study examined the effect of achievement goal on homework behavior and achievement emotion as a mediator for high school students in Sukoharjo Regency. Four hundred twenty-four high school students in Sukoharjo Regency by cluster purposive sampling were used in the study. Mediation analysis was applied to test the effects of achievement emotion mediation on the achievement goal of homework behavior. The results of structural equation modeling show the effects of emotional mediation of pleasure in connecting with concentration and effort. Furthermore, the task approach, task avoidance, and other avoidances directly affect enjoyment; the task approach and other avoidances affect anxiety; the task approach, task avoidance, and enjoyment are influencing business and concentration. The theoretical and practical implications of these findings are discussed in the article.

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INTRODUCTION

Homework is an important part of educational activities that contribute to achievement related to the learning aspects of most high school age routines. Homework is one strategy that is intended so that students learn and practice working on problems outside school hours individually or in groups (Cooper, 1989). The extension of recognizing a material through homework will involve the transfer of previous skills that have been learned in the context of classrooms to new situations (Lee Jr, and Pruitt, 1979). It is not surprising that behavior in doing homework is often regarded as one of the important aspects of students to improve understanding and academic achievement.

Homework represents the substance most of the number of time students spend to work on certain subjects. According to the National Assessment of Educational Progress three-quarters of all students who are at the age of 13 and 17 years report doing some homework every day (Cooper, Robinson, and Patall, 2006). Kids at 9-year-olds report a rate of 16% in doing more than one hour of homework every day, that number jumped 37% for children aged 13 years, and 39% for children aged 17 years. Studies reveal that the average high school student in the class who does homework every day will outperform 75% of students without doing homework in the classroom (Cooper, Robinson, and Patall, 2006). Furthermore, the results of the Göllner, Damian, Rose, Spengler, Trautwein, Nagengast, and Roberts (2017) study have shown that students' efforts in doing sustainable homework can improve academic performance.

Unfortunately, for some students, homework is an activity that in a relatively short time will be able to provide boredom, anxiety (Suhendri, Sugiharto, and Suwarjo, 2012) to make children hate assignments (Sugiantini, 2013), frustrated, reduce student interest and enthusiasm, become obstacles because not all houses are conducive to learning, becomes a complaint because it is used as a punishment. Based on the results of observations, researchers obtained data about students' views on

homework, namely the presence of homework can motivate learning and improve achievement emotion.

However, some students stated that homework did not need to be given because they were tired of some extracurricular activities or tutoring, and very burdensome in learning. Furthermore, the phenomenon of the field in Sukoharjo Regency based on data from the Ministry of Education and Culture related to the recapitulation of the results of the national exam (UN) on mathematics subjects at the High School level decreased.

The results of the study by Trautwein, Lu'dtke, Schnyder, and Niggli (2006) that when students have high control and attach high scores when doing homework, they will strive harder and have a higher concentration in doing the homework by the subject.

Students' performance in doing homework is influenced by achievement emotion. This is in line with Dettmers, Trautwein, Ludtke, Goetz, Frenzel, and Pekrun research (2011) that pleasant and unpleasant emotional experiences in academic situations are known to affect students' abilities. Furthermore, Goetz, Sticca, Pekrun, and Murayama (2016) emotions shape learning behavior, influence their academic achievement, guide decisions to stay or drop out of academic programs and represent core elements of their psychological well-being.

In the value-control theory, achievement emotions are defined as emotions that are tied directly to achievement activities or achievement results (Schutz, and Pekrun, 2007). Achievement emotion is an emotion that is very important for learning and the performance of students in attending math at school. Schutz, and Pekrun (2007) explain the taxonomy of three dimensions of achievement emotion. Based on these grouping dimensions, this study focuses on enjoyment and anxiety. Two emotions are focused on research, namely emotions of pleasure and boredom.

In the context of education, students who have emotional achievement experience are associated with fun in learning activities when they have high self-confidence in performing

tasks in mathematics subjects well. Students have pride in achievement emotion experiences when they value the results of success and have a high sense of control to achieve success. Boredom is an activity that focuses on emotions that can be experienced when students do not appreciate mathematics learning activities, and when there are large or few challenges in learning activities (Luo, Ng, Lee, and Aye, 2016). Furthermore, students tend to experience anxiety when they consider the results of success or failure to be very important in goal orientation. On the other hand, the achievement goal that each student has in achieving academic achievement is also known to predict homework behavior. As, Santrock (2008) explains that several things cause individuals to have problems with good academic achievement, such as they do not set goals, do not plan on how to achieve goals, and do not supervise their progress in achieving goals.

This study used 3x2 conceptualization of the achievement target framework. The essence of the 3x2 taxonomy model is the purpose of the task approach, the purpose of task avoidance, the purpose of self-approach, the purpose of self-avoidance, the purpose of other approaches, other avoidance goals (Elliot, Murayama, and Pekrun, 2011). This study focused on achievement goals based on the task, task avoidance, another approach, and other avoidance.

There is an increasing number of studies on achievement emotions and achievement goals that significantly affect student learning. Some of the research available at the moment shows that homework raises a variety of emotions that can affect students learning and achievement. There is a little effort to systematically analyze the emotional consequences of students in the context of homework and the general theoretical model for these emotions is lacking. Besides, poor correspondence between how achievement goals are conceptualized and how those goals are operationalized. Therefore, this study seeks to fill the gaps related to achievement emotion and achievement goals as individual perspectives in their analysis of homework behavior in mathematics in high school students.

METHODS

Four hundred twenty-four high school students in Sukoharjo were used to participate in the research. The research sample was taken by using purposive cluster sampling which later spread the psychological scale inventory to the X grade students of high school in Sukoharjo. Before the study began, the participants were gathered in the class to receive their explanation and agreement. All participants receive approval for their participation. Then, the participants were assigned to fill out the research instruments provided.

The entire instrument of this research was obtained from adaptation. The back translation procedure is applied. Namely, two Indonesian-English languages, the translator, is involved in the back translation process. The first translator translated all scales from English to Indonesian, and then the second translator translated the Indonesian version of the scales into English.

There are for instruments used in this study, namely the Achievement Goal Questionnaire-Revised, Achievement Emotions Questionnaire (AEQ), and The Multi-Item Homework Scales. The four instruments can be explained as follows.

Achievement goals of students using the Achievement Goal Questionnaire-Revised (AGQ-R) developed by Elliot, Murayama, and Pekrun (2011). This consists of 12 items with a scale of 7 points from 1 (incorrect from me) to 7 (very true of me). This sub-scale was designed to assess the achievement goal in math homework, so the phrase 'in mathematics' was added. Cronbach's alpha now shows the task approach ($\alpha = 0.72$), task avoidance ($\alpha = 0.81$), other approaches ($\alpha = 0.79$), and other avoidances ($\alpha = 0.88$).

The Achievement Emotions Questionnaire (AEQ) is an instrument developed by Pekrun, Goetz, and Perry (2005). This consists of 21 items with a scale of 5 from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha now shows happy emotions ($\alpha = 0.93$) and anxious emotions ($\alpha = 0.90$).

Furthermore, the homeworking behavior of students using The Multi-Item Homework Scales was adapted from standard instruments (Trautwein, Lu'dtke, Schnyder, and Niggli, 2006; Cooper, Robinson, and Patall, 2006). This consists of 9 with a scale of 5 from 1 (strongly disagree) to 5 (strongly agree). Cronbach's alpha now shows effort ($\alpha = 0.83$) and concentration ($\alpha = 0.85$).

This study uses CFA (Confirmatory Factor Analysis) to examine the measurement of the dimensional validity of each endogenous and exogenous variable. Also, structural equation modeling and bootstrapped bias-corrected 95% with $N = 5000$ were used to determine the mediating effect.

RESULTS AND DISCUSSION

Table 1 presents the intercorrelation matrix, mean, standard deviation, score range, and alpha Cronbach. Measurements of the task approach and task avoidance are positively correlated with task avoidance, other approaches, concentration, and negatively correlated with anxiety. Meanwhile, other approaches are positively correlated with other approaches; happy emotions, effort, and concentration. Other avoidances are negatively correlated with enjoyment, effort, and concentration, but are positive with anxiety. Furthermore, anxiety is negatively correlated with emotions of pleasure, effort, and concentration.

Table 1. Results of Descriptive Statistics Analysis

	1	2	3	4	5	6	7	8
TAp	-	0.54***	0.21***	-0.04	0.60	-0.23***	0.68	0.60
TAv		-	0.24***	-0.10**	0.70	-0.18**	0.60	0.47***
OAp			-	-0.21***	0.33***	-0.08	0.30***	0.33***
OAv				-	-0.24***	0.16**	-0.12*	-0.18**
En					-	-0.28***	0.77	0.70
An						-	-0.33***	-0.35***
Ef							-	0.75
Co								-
M	12.31	12.74	12.20	11.98	41.70	43.24	20.17	16.39
SD	1.71	1.43	1.59	1.53	5.40	5.23	2.63	2,26
Range	1-7	1-7	1-7	1-7	1-5	1-5	1-5	1-5

Information:

TAp: task approach; TAv: task avoidance; OAp: other task; OAv: other avoidance; En: enjoyment; An; anxiety; Ef: effort; Co: concentration; M: mean; SD: standard deviation; α : alfa cronbach; * < .05; ** < .01; *** < .001

Prediction of Achievement Goal, Achievement Emotion on Homework Behavior

Testing of structural equations in this study was carried out by following the reference criteria from Vandenberg, and Lance (2000). The Goodness of Fit test results indicate an adequate level of fit indices ($\chi^2 (749) = 1907.77$; $\chi^2 / df = 2.54$; CFI = 0.901; SRMR = 0.04; RMSEA = 0.06). The results of SEM analysis by using the AMOS 22 application program can be explained in Figure 1.

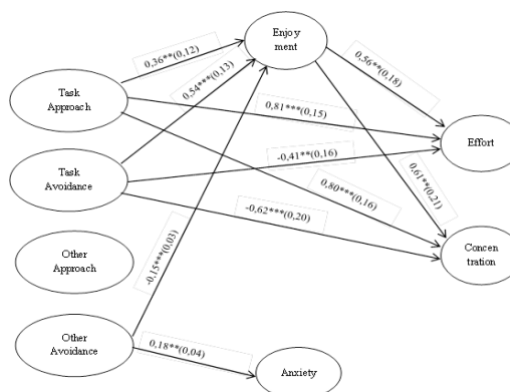


Figure 1. Effect of Achievement Goal on Homework Behavior through Achievement Emotion

Information:

Parentheses indicate standard errors
 * $p < 0.05$; ** $p < 0.01$

Based on the test results shown in the figure above, it can be explained that (a) the task approach has a positive effect on enjoyment ($\beta = 0.36$; $p < 0.05$), effort ($\beta = 0.81$; $p < 0.01$), concentration ($\beta = 0.80$; $p < 0.01$), and negative to anxiety ($\beta = -0.52$; $p < 0.05$); (b) task avoidance has a positive effect on achievement emotion ($\beta = 0.54$; $p < 0.01$), but negative for concentration ($\beta = -0.62$; $p < 0.01$), effort ($\beta = -0.41$; $p < 0.05$); (c) other avoidances negatively affected achievement emotion ($\beta = -0.15$; $p < 0.01$) and were positive for anxiety ($\beta = 0.18$; $p < 0.05$), and (d) enjoyment were influential positive for

concentration ($\beta = 0.61$; $p < 0.05$) and effort ($\beta = 0.56$; $p < 0.05$).

Effects of Mediation on Achievement Goal on Homework Behavior through Achievement Emotion

Mediation analysis was performed using bias-corrected bootstrapping with $N = 5000$. Indirect effects were estimated using estimates and confidence intervals (95%). A summary of the results of the mediation analysis on the model can be presented in Table 2.

Table 2. Indirect Effects of Achievement Goal on Homework Behavior through Achievement Emotion

Indirect effects	Estimate	SE	BC 95%		p
			Upper	Lower	
Tap → En → Co	0.26	0.08	0.49	0.13	0.01
TAv → En → Co	0.42	0.21	1.02	0.17	0.01
OAv → En → Co	-0.12	0.04	-0.05	-0.22	0.01
Total Effects for concentration	0.66	0.22	1.23	0.35	0.01
Tap → En → Ef	0.17	0.07	0.33	0.06	0.01
TAv → En → Ef	0.28	0.15	0.65	0.05	0.01
OAv → En → Ef	-0.08	0.03	-0.02	-0.16	0.01
Total effects for effort	0.42	0.17	0.79	0.10	0.01

Information:

TAp: task approach; TAv: task avoidance; OAv: other avoidance; En: enjoyment; Ag: achievement goal; SE: standard error; BC = bias-corrected of a percentile point

Based on the test results shown in the table above, the findings of the research hypothesis can be explained in more detail as follows: (a) the task approach has a positive indirect effect on concentration ($\beta = 0.26$; $p < 0.01$) and effort ($\beta = 0.17$; $p < 0.01$) through happy emotions; (b) task avoidance had a positive indirect effect on concentration ($\beta = 0.42$; $p < 0.01$) and effort ($\beta = 0.42$; $p < 0.01$) through happy emotions; and (c) other avoidances have a negative indirect effect on concentration ($\beta = -0.12$; $p < 0.01$) and effort ($\beta = -0.08$; $p < 0.01$) through happy emotions.

From a series of analyzes above, it can be concluded that there are some significant results of the effect of achievement goals on homework behavior.

Every goal pursued by individuals in everyday life and academics is a competency-based goal that is unique and personalized to meet the challenges and threats they face (Elliot, Murayama, and Pekrun, 2011). The underlying assumptions are related to the achievement goal model that mastery-based or task-based goals are beneficial and performance-based, or others are

detrimental to the individual, thus affecting the affective experience. The explanation can be interpreted that the achievement goal that is owned by an individual will be able to influence the predetermined achievement and other aspects by the person. Furthermore, the achievement goal emphasizes the role of goal orientation in managing various kinds of affective, cognitive, and individual behavioral outcomes during the competency development process.

Efforts are considered effective for improving academic performance with a goal-setting strategy. Midgley, Kaplan, and Middleton (2001) found that goals influence the improvement of student academic performance. The explanation can be interpreted that the achievement goal is the key that can predict learning and learning performance that is different for each student. An individual who adopts a higher achievement goal approach is more likely to make the maximum effort in each of his activities so that he leads to optimal performance. Thus, the achievement goal of each

student will influence several factors in academic activities (Elliot, Murayama, and Pekrun, 2011).

Previous studies related to the influence of achievement goals, achievement emotions, and homework behavior has been identified by Luo, Ng, Lee, and Aye (2016), Pekrun, Elliot, and Maier (2009), and Goetz, Sticca, Pekrun, and Murayama (2016). However, the study only measured the influence between variables as a single construct; they did not explain the effect of achievement goals on homework behavior through achievement emotions as mediators. Therefore, the results in this study of achievement goals, achievement emotions, and homework behavior are new findings. Furthermore, this finding can support further analysis related to the effect of achievement goals on the behavior of doing homework with achievement emotion as a mediator. The effect of achievement goal on homework behavior can be explained as a predictor of performance (Pekrun, Elliot, and Maier, 2009) because achievement goals have an important influence on student motivation and performance achievement (Dweck, 1986; Elliot 1997).

Individual achievement emotions that are also very important for learning and performance are being carried out, as has been explained in the research of Schutz, and Pekrun (2007); Sunawan, Yani, Anna, Kencana, Mulawarman, and Sofyan (2017); and Luo, Ng, Lee, and Aye (2016). The value-control theory of achievement emotions described by Goetz, Sticca, Pekrun, and Murayama (2016) presupposes the perceived goal orientation of academic activities can produce positive emotions, and reduce negative emotions. The explanation can be interpreted that one of the achievement goals set in the following learning in school will contribute to emotions. Furthermore, achievement goals and achievement emotions that an individual has will affect performance.

There is preliminary evidence to show that the achievement goal affects students' achievement emotions (Huang, 2011). However, on the results of the study, some results show that other avoidances negatively affect happy emotions. This is in line with research conducted by Pahljina-Reinic, and Kolic-Vehovec (2017)

which shows that performance goals can damage happy emotions and increase anxiety emotions in students. This is because of the inconsistencies felt in the focus of students regarding the results of achievement and the definition of achievement determined, as well as the effect of a failure.

The goal orientation that individuals choose to pursue in managing achievement will give their reasons for their influence on involvement, directing attention, and effort when learning. An individual will be motivated to take part in learning and engage in assignments when they feel success and consider the task to be an important part of them. The focus of the situation related to the specific goals an individual has is the situation when doing homework. Regular homework is a positive thing related to student academic achievement. Therefore, homework is one situation that can be used to show the relationship between achievement goals and academic activities.

Previous findings indicate that the implications of homework can support student academic achievement in school (Cooper, Robinson, and Patall, 2006). Active involvement in school is important for the adjustment of students in educational settings. Individuals who are involved in their behavior and emotions in school, such as homework, are more likely to be able to show good adjustments and succeed in the academic field. Conversely, students who are not involved in academic activities are more likely to experience academic failure and have negative results.

Based on the findings of Trautwein, Lu'dtke, Schnyder, and Niggli (2006), it is explained that the conceptualization of students on homework includes the behavior associated with concentration and effort in doing homework. The explanation can be interpreted that there are positive relationships related to homework and academic achievement. The choice of an in-depth approach to homework depends on many factors. Thus, the relationship can be used as a basis in predicting the effect of achievement goal on homework.

The results of the analysis indirectly indicate that significantly happy emotions

positively significant mediate the task approach to concentration and effort; negatively significant mediates other avoidances of concentration and effort; and positively significant avoidance of tasks towards concentration and effort. This is in line with the research conducted by Ames & Archer (1988) explaining that students who feel an emphasis on mastery goals prefer tasks that are challenging and have a positive attitude.

Meanwhile, students who perceive performance goals tend to evaluate their abilities negatively, show negative attitudes, and connect them to failure. Furthermore, the study of Mih (2015) showed that goals were associated with achievement emotions and behavior.

In this study, we sought to extend the existing research studies by considering motivational goals, achievement emotions in their influence on homework behavior. Furthermore, the results of this study can be used as a consideration for counselors in creating training and service activities that focus on positive emotions so that they focus on the things they like when attending lessons.

CONCLUSION

This study has examined the effect of achievement goals on homework through achievement emotions. The results of the analysis of direct effects can be concluded that (a) the task approach has a positive effect on enjoyment, effort, concentration, and negativity towards anxiety; (b) task avoidance has a positive effect on enjoyment, but negatively on concentration, effort; (c) other avoidances negatively affect enjoyment and positive towards anxiety, (d) enjoyment have a positive effect on concentration and effort; (e) the task approach has a positive indirect effect on concentration and effort through enjoyment; (f) task avoidance has a positive indirect effect on concentration and effort through enjoyment; and (g) other avoidances have a negative indirect effect on concentration and effort through enjoyment.

This study can support the clarification of the impact of achievement goals, achievement emotions, and homework behavior. Limitations

in this study relate to correlational research design and achievement emotions measured by two dimensions, namely enjoyment and anxiety, and homework behavior, namely concentration and effort. In subsequent studies, it is recommended to do with a longitudinal study in examining causes, precursor theory, and the effect between achievement goals, achievement emotions, and homework behavior, and using other dimensions to operationalize both variables.

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