



MOTIVATION FOR ACADEMIC ACHIEVEMENT AND ITS RELATIONSHIP TO THE METACOGNITIVE THINKING SKILLS AMONG HIGH SCHOOL STUDENTS IN THE SUBURBS OF JERUSALEM

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Abstract

Purpose of the study: This study aims to identify the degree of Motivation for Academic Achievement and its Relationship to the Metacognitive Thinking Skills among High School Students in the suburbs of Jerusalem.

Methodology and research methods: To achieve the objectives of this study, the relational descriptive approach was adopted. The sample of this study included (380) high school students (male and female). Data was obtained, analyzed, and processed statistically.

Results: The findings suggested that there were statistically significant differences in the means of the motivation for academic achievement due to gender in favor of females. The results also showed that there were no statistically significant differences at the level of significance ($\alpha \leq 0.05$) in the means of the metacognitive thinking skills among high school students due to gender, an average of the former class, or father-mother's educational qualification. Moreover, the results revealed that there was a correlation between the motivation for academic achievement and metacognitive thinking skills.

Scientific novelty: It is clear that metacognitive thinking skills improve the degree of motivation for academic achievement by increasing the capacities of the students to learn and grow their learning motivation. It is considered a strong indicator of academic success. Students with metacognitive thinking skills achieve better academic achievement compared to students who have a lower level of metacognitive thinking skills.

Practical significance: The importance of this study is expressed in the significance of the issue under consideration, as awareness of metacognitive thinking skills increases the capacity to handle and use them in various educational situations.

Keywords: Motivation, Academic Achievement, Metacognitive, Thinking Skills.

INTRODUCTION

The concept of “motivation for achievement” gains a great deal of the pedagogues and psychologists interest because of its systems and coherence that limit the nature of human behavior (Kafafi, 2009), it is one of the modern concepts in the field of Psychology, as it was initiated by Flavell (Flavell, 1976).

Academic motivation is one of the most critical incentives for learners and students, representing one of the requirements the student's needs in the learning environment (Farnam, & Anjomshoaa, 2020). Achieving excellence in academic performance is a pillar of students' self-academic achievement, as it plays a vital role in learning processes and day-to-day activities. From the viewpoint of psychologists, teachers should not only receive knowledge, but they must also involve in the learning process, which requires complete and profound participation. Statistical data has shown that learners who have some academic motivation and pay attention to what they learn will achieve perfect learning outcomes (Cerasoli et al., 2014; DePasque and Tricomi, 2015, Abdelrahman, 2020).

Several studies demonstrated that academic failure is due to the lack of academic motivation among students, and the educational institution does not respond to students' concerns. Teachers play a prominent role in enhancing students' motivation to achieve their academic goals (Kruglanski, 2018, Wlodkowski, & Ginsberg, 2017, Su, & Cheng, 2015).

Metacognitive thinking skills play a significant role in predicting the academic achievement; students who have these skills achieve higher academic achievement compared to students with skills that are less than metacognitive skills, so they link achieving their goal with the academic success (Coutinho, 2008). They also increase the capacities of students to learn and boost their motivation for learning (Sahravi, 2011, 43), in particular, students' progress, dominance and the improvement in their performance and comprehension of the educational situations come as a result of their motivation for achievement through which they can fulfill themselves through what they accomplish and the goals they achieve (Khalifa, 2006), Bin Abed, & Bin Al-Taher (2017) claimed that developing metacognitive thinking skills raises the incentive for academic achievement and increases the interest of the learner to plan, monitor, control and performing his learning (Alomari, 2012),

in addition, to think independently and to directing himself ([Nawfal, and Saifan, 2011](#)), it can also give him a high degree of thought throughout his life ([Mazghaish, & Abdullah, 2008](#)).

In this regard, several cognitive education research and studies have shown the effectiveness of metacognition in helping students boost their learning and comprehension levels, including the studies of [Fan, & Zhang 2009](#); [Alhazoun, 2009](#); [Sungur, 2007](#); and [Samsun, 2015](#).

Several studies ([Bogdanović et al., 2017](#); [Abdellah, 2015](#)) have shown that students must participate actively in their learning and must be able to plan and monitor their cognitive processes, their situations, and their behaviors. Therefore, students must have a high level of meta-cognitive skills to participate actively in the learning process and achieve success.

Meta-cognitive skills are factors that can lead students to academic motivation because they reflect students' knowledge of how to learn as a form of understanding oversees different cognitive processes. When cognitive skills increase performance, metacognitive skills work to guide and improve performance and apply knowledge in new contexts. They are a set of planning, control, and arrangement skills of learning strategies. ([Abdelrahman, 2020](#), [Alghamdi, et al, 2020](#), [Barenberg, & Dutke, 2019](#)).

Many studies, such as [Ben Braika \(2007\)](#) and [Abu Ghazal \(2007\)](#), [Hannash and Faris \(2014\)](#), and [Bodali \(2018\)](#), have looked at the relationship between metacognitive thinking skills and the academic achievement, suggesting that there is a relationship.

[Al-qutan, & Alorsan, \(2018\)](#), [Almu'tham, & Al-Menoufy, \(2017\)](#) as well as [Bin Abed, & Bin Al-Taher \(2017\)](#) have indicated that the effectiveness of using metacognitive thinking skills has a major significant impact on developing thinking and increasing students achievement. [Fares, & Saad, \(2018\)](#) suggested that there is a connection between metacognitive thinking skills and academic achievement. There were no differences in gender variable and major (specialization) variable, whereas [Hussein, and Manoukh \(2009\)](#) revealed that there were differences due to major variable in favor of the scientific major, but there were no differences due to gender variable.

[Rahimirad, & Shams \(2014\)](#) found out remarkable improvement in student's awareness of metacognition after using metacognitive thinking skills. [Aldakhil, and Abdel-Khaleq \(2019\)](#) one of those studies that were conducted on motivation for achievement and its relationship to the other variables as the results revealed a negative relationship between motivation for academic achievement and the concerns about a future career, they also showed that there were differences in motivation for academic achievement in favor of female students, there were also differences in favor of the high *Grade Point Average* (GPA), while [Alajami \(2019\)](#) showed that there was a positive relationship between boredom level among headteachers and motivation for achievement among teacher. This study also revealed that there were no differences due to gender, educational qualification, or grade. [Alghamdi \(2019\)](#) showed a negative relationship between the motivation for academic achievement and the concerns about exams, which contributed to disparities in motivation for achievement due to the educational qualification in favor of those with a high level of achievement.

Researchers performed several studies in the suburbs of Jerusalem. For example, the study of [Abdulqader and Rimawi \(2019\)](#) examined the relationship between cyberbullying and motivation for achievement and found an inverse relationship between them. [Khater \(2018\)](#) also investigated the relationship between mental health and academic achievement and revealed a positive relationship between them. In his study, [Bakrei \(2019\)](#) showed a positive relationship between parental treatment styles and motivation for academic achievement.

While the studies conducted in the suburbs of Jerusalem examined the relationship between motivation for achievement and bullying, mental health, and parental treatment, the current study was the only one to study the relationship between meta-cognitive skills and motivation for academic achievement.

The problem of the Study

It is clear that metacognitive thinking skills improve the degree of motivation for academic achievement by increasing the capacities of the students to learn and grow their learning motivation. Teachers can only help students develop these skills only by encouraging them to use metacognitive thinking skills during the learning process as well as increasing their enthusiasm for learning; it is considered a strong indicator of academic success. Students with metacognitive thinking skills achieve better academic achievement compared to students who have a lower level of metacognitive thinking skills.

Hypotheses of the Study

First hypothesis: there is no statistically significant relationship at the significance level ($\alpha \leq 0.05$) between academic achievement and metacognitive thinking skills among high school students in the suburbs of Jerusalem.



Second hypothesis: there is no statistically significant relationship at the significance level ($\alpha \leq 0.05$) in the means of motivation for academic achievement levels among high school students in the suburbs of Jerusalem due to the following variables (gender, former grade, father's educational qualification, mother's educational qualification).

Third hypothesis: there is no statistically significant relationship at the significance level ($\alpha \leq 0.05$) in the means of metacognitive thinking skills among high school students in the suburbs of Jerusalem depending on the following variables (gender, former grade, father's educational qualification, mother's educational qualification).

Importance of Study

The importance of this study is expressed in the significance of the issue under consideration. The motivation for academic achievement and metacognitive thinking skills are important and essential subjects that have yet to be addressed, they are concepts and pillars in the field of education that require enhanced research in the cognitive discipline to keep up with the urgent changes in this area, as awareness of metacognitive thinking skills increases the capacity to handle and use them in various educational situations.

Terms of Study

Metacognitive thinking skills: Louca (2003, 25) described metacognitive thinking skills as "processes used by the learner when discussing and planning the subject matter of the material being learned, in order to track and monitor his performance and evaluate his thoughts, assumptions, evidence, fact, and evaluation in light of specific criteria.

Metacognition: Flavell (1979, 45) defined it as the individuals' understanding of their cognitive processes they conduct and their outcomes.

The motivation for achievement: Atkinson (1980) described the motivation for achievement as a relatively steady readiness in one's personality that determines the extent of the individual efforts and perseverance towards achieving success or goal. It leads to a certain degree of satisfaction, namely, in situations that require performance evaluation in light of a certain level of excellence.

METHODOLOGY AND PROCEDURE:

Study Approach

A *relational Descriptive Approach* was used to achieve the objectives of this study. It is defined as an approach that studies a current phenomenon, event, or problem. It is characterized as an approach that explores an existing phenomenon, event, or problem, and can be used to obtain the information needed to answers questions or hypotheses of research, therefore, it is that type of research methods by which it is possible to know whether there is a connection between two or more variables, and then identifying the level of that connection.

Population and the sample of the study

The study population consisted of all high school students in the suburbs of Jerusalem; they were (2924) male and female students. According to the records of the Directorate of Education in the suburbs of Jerusalem, for the first semester of the school year (2019), the sample of the study included (380) male and female students who had been selected in the Clustered Random Way, as this way fits such population, using Richard Geiger's equation for sample size calculation. Table (1) shows the distribution of the sample participants.

Table 1: The distribution of participants in the sample of the study

Variable	No.	Percentage
Gender	Male	144
	Female	236
Average of the former grade	> 70	86
	(70 – 85)	194
	≤ 86	100
Father's educational qualification	Lower than Tawjihi	68
	Tawjihi-Bachelor's Degree	221
	Higher than Bachelor's Degree	91
Mother's educational qualification	Lower than Tawjihi	49
	Tawjihi-Bachelor's Degree	262
	Higher than Bachelor's Degree	69

Instrumentation

In light of the revision of some of the past literature and their instruments, as well as the revision of the educational studies related to the subject matter of this research, first, a scale of the motivation for academic achievement prepared by [Abu Ghazal \(2007\)](#), was adopted, which was cited from [Alomari \(2012\)](#) study the scale consisted of (23) statements. Second, a scale of metacognitive thinking skills was used, it is the Arabized version of Schraw and Dennison scale [Schraw & Dennison \(1994\)](#), which was used in [Al-Jarrah, & Obeidat \(2011\)](#) as it contains (33) statements. The participants' responses were formulated into statements according to a five-level Likert scale, where the participant's responses to the statements and the method of correction were as follows: quite significantly (5 points), significantly (4 points), middle (3 points), very little (2 points) and little (1 point).

To identify the means of participants' responses, the following were approved: Statistical standard was used, with the following equation:

$$\text{Category length: } \frac{\text{maximum-minimum (for range)}}{\text{Supposed categories No.}} = \frac{5-1}{3} = \frac{4}{3} = 1.33$$

The three levels were as follows:

- $1 + 1.33 = 2.33$, thus the statements with means range from (1 – >2.33) indicate a low level.
- $2.34 + 1.33 = 3.67$, and so the statements with means range from (2.34 and >3.67) indicate a middle level.
- $3.68 + 1.33 = 5$, and so the statements with means range from (3.68-5) indicate a high level.

To ensure the validity of the scale, its psychometric properties have been measured:

Instrument validity

Validity indication and study tool stability, as well as both of its fields, were extracted, through presenting it to a sample of specialists in the field of psychology, measurement, and evaluation, *Pearson Correlation Coefficient* was also extracted, it is found that the correlation coefficient value was appropriate for the current study.

Instrument Reliability

The reliability of the instrument was checked by measuring the reliability of the total score of the reliability coefficient for the fields of this study according to the reliability *Cronbach Alpha* equation, the total score for metacognitive thinking skills among high school students in the suburbs of Jerusalem was (0.76), and (0.90) for the level of motivation for academic achievement, the findings suggested that this instrument is sufficiently reliable to fulfill the objectives of this study.

Statistical processing

After collecting the questionnaires and verifying their validity to be analyzed, they were encoded (given certain digits) in preparation for inserting their data into the computer to carry out the necessary statistical processing and analyze the data based on the study questions. The statistical processing of the data was carried out using (SPSS) version 23 program (Statistical Package for Social Sciences) to extract the means and the standard deviations for each statement in the questionnaire. (t-test), One-Way ANOVA, Pearson Correlation Coefficient, and Alpha Cronbach equation were also used.

RESULTS

The value of *Person Correlation Coefficient* between the motivation for academic achievement and metacognitive thinking skills was (R = 0.02) and the significance level was (Sig = 0.579), there were positive correlations with statistical significance, i.e. greater motivation for academic achievement gives a higher level of metacognitive thinking skills, and vice versa.

Table 2: The results of the statistical analysis for the participants' responses at the level of motivation for academic achievement among high school students in the suburbs of Jerusalem due to gender, grade average, and the father – mother's educational qualification

Field		Mean	SD	Value	Sig
Gender	Male	3.36	0.492	T	0.00
	Female	3.69	0.401	-7.04	
	> 70	3.40	0.48	F	.000
Grade average	(70 – 85)	3.57	0.40	10.21	

		≤ 86	3.70	0.51		
Father's qualification	educational	Lower than Tawjihi	3.38	0.37	F 6.66	.001
		Tawjihi-Bachelor's Degree	3.60	0.38		
		Higher than Bachelor's Degree	3.62	.640		
Mother's qualification	educational	Lower than Tawjihi	3.44	.310	F 3.42	.033
		Tawjihi-Bachelor's Degree	3.56	.480		
		Higher than Bachelor's Degree	3.67	.4610		

The results of (t-test) and the means are attributed to the gender variable. The findings showed that the males gained (M = 3.36, SD = 0.49) compared to the females (M = 3.69, SD = 0.40), the value of (T) for the total score was (T = -7.040), at a significance level (P = 0.00), that is, there were differences in favor of females.

The results of One-Way ANOVA are attributed to the variable of former grade average when it was (>70), as they were (M = 3.40, SD = 0.48), compared to the average (70 – 85) as they were (M = 3.57, SD = 0.40), the value of (F) for the total score was (10.21) at a significance level (0.00) which was lower than the significance level ($\alpha \leq 0.05$), that is, there were differences due to the former grade average variable, or to the fields. The differences were in favor of the average (≤ 86), followed by the average (70 – 85).

For father's educational qualification variable, it should be noted that the findings related to the educational qualification which was lower than Tawjihi were (M = 3.38, SD = 0.37) compared to Twjihi – Bachelor's Degree (M = 3.60, SD = 0.38) and higher than Bachelor's Degree (M = 3.62, SD = 0.64), the value of (F) for the total score was (6.66) at a significance level (0.00) which was lower than the significance level ($\alpha \leq 0.05$), that is, there were statistically significant differences due to the father's educational qualification variable when it was higher than Bachelor's Degree, followed by the level of Tawjihi – Bachelor's Degree.

For the mother's educational qualification variable, it is noted that the findings related to the educational qualification which was lower than Tawjihi were (M = 3.44, SD = 0.31) compared to higher than Bachelor's Degree (M = 3.67, SD = 0.46), the value of (F) for the total score was (3.42) at a significance level (0.03) which was lower than the significance level ($\alpha \leq 0.05$), that is, there were statistically significant differences due to the mother's educational qualification variable, the differences were in favor to the mother's educational qualification variable when it was higher than Bachelor's Degree.

Table 3: The results of statistical analysis for the participants' responses at metacognitive thinking skills level in the high school students in the suburbs of Jerusalem are due to the variables of gender

Field		Mean	SD	Value	Sig
Gender	Gender	3.83	0.41	T	.567
	Male	3.86	0.44	-0.574	
Grade average	Female	3.83	0.44	F	.312
	> 70	3.88	0.44	1.167	
	(70 – 85)	3.81	0.39		
Father's educational qualification	≤ 86	3.90	0.48	F 0.510	.601
	Lower than Tawjihi	3.84	0.42		
	Tawjihi-Bachelor's Degree	3.83	0.41		
	Higher than Bachelor's Degree	3.86	0.50		
Mother's educational qualification				F 0.231	.794
	Lower than Tawjihi	3.84	0.41		
	Tawjihi-Bachelor's Degree	3.88	0.42		
	Higher than Bachelor's Degree				

Analyzing the findings of the study, it should be noted that the level of metacognitive thinking skills among high schools students in the suburbs of Jerusalem, based on each of the following variables (gender, grade average, father-mother's educational qualification), was higher than the level of significance ($\alpha \geq 0.05$), that is, there were no statistically significant

differences in the level of metacognitive thinking skills among high school students in the suburbs of Jerusalem due to the former grade average or fields.

DISCUSSION

In light of the findings of this study, it was revealed that greater the motivation for academic achievement gives a higher level of information processing; so that the information is more structured for the student. Students with high motivation for academic achievement tended to do their job properly and had a high desire for knowledge, they were also able to plan, organize, and evaluate more and more, which reflects positively on developing their metacognitive thinking skills. This result is consistent with the studies ([Ben Braika, 2007](#); [Abu Ghazal, 2007](#); [Hannash, Faris, 2014](#); [Bodali, 2018](#)), as it revealed a correlation between achievement motivation and metacognition.

It has been found out that females have higher motivation for academic achievement compared to males, we conclude that this is due to the nature of life in the Palestinian community, where females are more likely to stay at home, which gives them the greatest opportunity to excel and accomplish academic tasks more than males, in addition to the females' view of education, since they look with an incredibly important view to achieving success, progress and improve their social status. This result was inconsistent with the studies ([Fares, & Saad, 2018](#); [Hussein, Manoukh, 2009](#)) as it was reported that there were no differences attributed to the gender variable.

High-achievement students have a greater capacity to manage knowledge and to use the mental processes in the decisions and experiences they face in order to align with themselves more. Therefore, high school is perceived to be the time to fulfill their future ambitions, which has contributed to their higher achievement and enhanced their motivation for achievement.

The findings indicated that children, fathers, and mothers whose educational qualifications are *High Studies* (higher than Bachelor's Degree), concentrate more on their children's education and follow their academic achievement continuously, which would serve as an incentive that reflects in their children's motivation for the academic achievement, since the mother makes a significant contribution to their educational career, what motivates their children to gain higher academic achievement, that positively affects their motivation for achievement. This result was consistent with the study ([Alghamdi, 2019](#)), which showed differences in favor of students with high achievement.

The findings also showed that metacognitive thinking skills do not depend on the difference between females and males as much as they depend on training them on this way of thinking, and that both males and females were subjected to the same learning experience in similar educational settings in terms of preparation and experience, which has made them nearly equal in these skills. This result was consistent with the study ([Alajami, 2019](#)), where it was found that there were no differences due to the gender variable, while it was inconsistent with the study ([Aldakhil, & Abdel-Khaleq, 2019](#)) as it revealed differences in favor of females.

Researchers attribute this finding to the fact that metacognitive thinking skills are not focused on students' average and their achievements, but rather on the fact that they rely on training students on these skills and providing them with an adequate educational experience in order to acquire and learn those skills, although school teachers do not concentrate on empowering students with these skills directly, it is difficult for students to learn them on their own.

Researchers also attribute these findings to the fact that metacognitive thinking skills are those skills that you need to train on directly because they are mental skills, in their entirety, which help students make sense of and use them in various choices and situations, so students cannot get them unless they are specifically trained or exposed to them in their surroundings.

Finally, the researchers attribute these findings to the fact that the educational qualification of the mother can motivate the student in terms of achievement and success. However, in terms of metacognitive thinking, it is considered as those skills that need to be trained on a direct basis, as it is difficult for the student to acquire them in case, he does not interact with them directly in his surroundings, whether in the family or at school.

CONCLUSIONS

Females have more motivation for academic achievement more than males, their academic excellence stems from their internal motivation. Parents with high educational qualifications push their children to excel in their academic achievement; they also provide females with more attention and priority in this area. Metacognitive thinking skills are among the skills that students need to be trained on and practice in their environment, whether at home or at school, so the teacher does need to train and work on these skills in order to pass them to their students, as students acquisition of metacognitive thinking skills is reflected in teacher's academic achievement and progress.

RECOMMENDATIONS

After conducting this study, the researchers recommended the following:

- To incorporate educational curricula into different strategies that lead to improving the level of metacognitive thinking among students.
- To training teachers through courses, workshops, and seminars on metacognitive thinking and how to use it in their teaching.
- To carry out further research on metacognitive thinking and the method used to improve the cognitive thinking among students in the general education stages.
- To carry out further research on the motivation for academic achievement and its relationship to other variables.

CONFLICT OF INTERESTS

The authors declare that they have no conflicting interests.

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