

# A Comparative Study on the Relationship between Meta-Cognitive Thinking and Motivation for Achievement among Gifted and Non-Gifted Secondary School Students in Irbid City, Jordan.

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## ABSTRACT

Many educators call for special attention and care to be given to the gifted in order for them to be able to better serve and develop the community. The interest in the gifted increased in mid-21st century as many specific education programs were designed and many studies investigated their characteristics. These were carried out with an aim to cater to their needs and match their lifestyle in a better way so that they are able to play an efficient and pivotal role for the development of their community (Al-Saidi, 2007).

Keywords: *Thinking, Motivation, Secondary School*

## INTRODUCTION

Many educators call for special attention and care to be given to the gifted in order for them to be able to better serve and develop the community. The interest in the gifted increased in mid-21st century as many specific education programs were designed and many studies investigated their characteristics. These were carried out with an aim to cater to their needs and match their lifestyle in a better way so that they are able to play an efficient and pivotal role for the development of their community (Al-Saidi, 2007).

The concept of creating a specific educational program for the gifted led to a serious debate among the interest group and the stakeholders in the field of education of many countries. While some countries supported the idea, others went against it. Those who supported the idea argued that the specific program will help the gifted children to develop in a balanced manner; mentally, emotionally and physically. This is because when a gifted child mixes with a similar group of gifted people, he will be able to develop mentally about his identity as well as identify his strengths and weaknesses, which would enable him to grow in all aspects.

This specific program is considered essential towards achieving social growth because the gifted represents an asset and wealth which should be given due attention to enable them to serve their community better in line with the concept of equal opportunities supported by all democratic societies. In such political and educational systems, gifted students are exposed to a suitable environment and given equal chances to explore their full potential and prove their real identities. This is what the defenders of the rights of the gifted children are calling for in order to meet their needs and challenge their abilities (Al Khalidi, 2003, Girjan, 1999).

The Hashemite Kingdom of Jordan is one among many countries that support the idea of creating such a specific program and pays great attention to the gifted students. Therefore, the kingdom has established schools for excellent students called King Abdullah II Schools for Excellence. These schools provide specialized education with the aim of developing practical education and a better school environment for gifted students in order to develop their gifts and creativity through educational democracy and equal opportunities (Education Ministry, 2003).

The selection process and admission of students in these schools are done in coordination with the educational excellence centre under the Al-Hussein Foundation, where the department of measurement and guidance will conduct a placement test through which the students are selected and nominated to study in any one of the schools (e.g., Al-Yubel School) (Educational Excellence Centre, 2001).

The test follows a selection mechanism and standard and these are described below:

Students who completed primary school education successfully will be selected based on scores of not less than 95% for Science, Mathematics, and English, and an overall score (CGPA) of not less than 95%. There is also a review of students' previous academic record from the past three years to ensure consistent progress in different subjects. Students' IQ will also be measured through an IQ test. They need to score not less than 140 and based on the scores, 100 students are selected every year. A team of teachers and a school principal is formed to study the historical background of each case and students will be then be called for an interview subject to their parents' consent. These students are given bonus marks for their technical, literary and sports gifted.

The definition of gifted differs based on theoretical orientations and practices (Al-Ziibi, 2003). The difference in the definition of gifted is based on several questions such as: Does gifted mean an excellent general mental ability or does it include different skills and gifts such as technical ability or ability in one specific academic subject, creativity or social skills? However, there are clear agreement and consensus that the gifted have a high IQ compared to the ordinary. In this context, it is said that those who are categorized as gifted are able to absorb concepts, organize and use them appropriately more than the ordinary (Al-Wagfi, 2004).

The contemporary definitions of gifted and gifted have been adopted to change people's perception of high mental ability as the only criterion used to define gifted. Renzulli (1977) mentioned in his definition of gifted that it is composed of three human characteristics and these are general abilities above the median, high level of motivation, and high level of creativity.

Based on this definition, it appears that he has expanded the concept of gifted, where he demonstrated the significant role of motivation in creating gifted, and also the importance of integration between mental ability, creativity, and motivation. A high degree of motivation or a strong drive to acquire knowledge along with a high level of creativity usually lead to a high level of abilities (Devis and Rim, 2001).

A study by Gatami (1996), Al-Fahl (1999) and Lindsay and Phillips (2006) indicates a relationship between motivation, mental ability and intelligence. Al-Khalidi (2002) interprets this relationship as motivation that helps to free a person from psychological forces and directs him/her to exercise more control and have perseverance to excel in an action. He believes that action and perseverance are ways to succeed in life and to attain excellence.

The gifted also enjoy a high level of energy when engaged in play or work. They have intrinsic motivation that drives them towards high achievement. Most researches that are based on observation at homes and schools indicate that the gifted excel because of a strong motivation to explore, to be curious, to study, to dig deep for knowledge and to raise questions. Therefore, their aspirations should be fulfilled so that the gifted's abilities are not hindered or suppressed resulting in a lack of concentration and focus (Asiri, 2002).

### **Motivation and Meta-Cognitive Thinking**

Many studies (Landine and Steart, 1998; Riswan and Liu, 1999; Reszven, Ahmadi and Abedu, 2002; and Efklides, 2011) indicate that a high level of meta-cognitive thinking increases academic achievement, and the strategies for acquiring knowledge change due to changes in motivation. Studies by Carretti, Borella, Zavagnin and Debeni (2011), and Baykent and Esme (2006) highlight the importance of meta-cognitive thinking to develop students' interest towards acquiring knowledge. Studies by Tas, Brown, Esen-Danaci, Lysakes and Brune (2012) highlight that meta-cognitive thinking is strongly related to intrinsic motivation which then can lead to self and independent education. Peirce (2004) believes that the relationship between meta-cognitive thinking and motivation is derived from the Attribution-theory

and self-efficacy. When students are given a task, success or failure in the task will push the students to attribute the success or failure to internal causes (ability or effort) or external causes (difficulty of the task). In this context, the attribution a person makes has a significant impact on his success or failure in everything he does. For students who attribute academic difficulty to low ability, there is a possibility that they will have low esteem and will not furnish much effort to succeed. In contrast, students who have higher esteem will choose difficult tasks or furnish more effort and perseverance, and apply appropriate strategies of problem solving to face tasks given (Pierce, 2003). Chan (1996) shows that the gifted consider themselves more intellectually capable and less exposed to failure because they have high self-esteem.

### GIFTED AND METACOGNITIVE THINKING

Teaching critical thinking skills has become an essential goal in contemporary educational institutions. Therefore it is vital to focus on developing the mental ability of students and to give them equal opportunities to know how the mind work which would then enable them to explore ways of acquiring knowledge and achieve any tasks of any level (Al-Izah, 2000).

A student's awareness of his/her thinking and feelings enables him/her to know his/her self. Research has found that people with high mental ability are more capable of understanding their own feelings, and are more confident to make their own choices. There are studies that have proven a positive correlation between giftedness and meta-cognitive thinking. They explored meta-cognitive strategies that enable students to choose whatever tasks they ought to complete (Risemberg and Wingenbach, 1982; Zimmerman, 1992; Abullya and Chan 1996; and Martini 2004 and 2003). The teaching of meta-cognitive thinking skills should therefore include helping the gifted to understand the sources of their special thought, their opinions, orientations and values of others. In analyzing a topic, for instance, students can be coaxed into understanding how an analytical process is done, and ask themselves why they are studying a topic or a particular question and what the topic or the question mean to them (Davis, 2001). Costa (1984) emphasized the importance of students' understanding of awareness in solving problems.

### Statement of the Problem

In recent years, many schools and centers have started to pay attention to the gifted students and design specific programs to develop these students' mental and emotional abilities. This study aims to measure meta-cognitive thinking skills and motivation for achievement of the gifted students who follow the specific education program created to develop their mental and emotional abilities. Do these abilities of the gifted students differ from those who follow the ordinary education program in other schools?

The questions of the study are as follow:

1. What is the level of metacognitive thinking skills of the gifted and non-gifted students?
2. What is the level of motivation for achievement among gifted and non-gifted students?
3. Is there a statistically significant difference at the level of  $\alpha \leq 0.05$  between the correlation in the measurement of metacognitive thinking skills as a whole and the measurement of motivation for achievement based on variables: gifted and non-gifted?

### Significance of the Study

The significance of the study lies in the discovery of differences between gifted and non-gifted students through correlation between meta-cognitive skills and motivation for achievement as many studies conducted in similar contexts did not look into these.

### Definition of Terms

**Meta-cognition** - a person's awareness of learning practice by knowing what he knows and what he does not know. A person's thinking of how to learn.

**Achievement Motivation** - a relative permanent readiness that identifies the extent of a person's action and perseverance towards achieving success.

**Gifted** - the students who are admitted into the King Abdullah II Schools for Excellence through principles and standard set by the Ministry of Education. These schools aim to develop a program for the gifted students to meet their

needs and develop their innate ability.

## RESEARCH DESIGN

### Participants and sampling

The population of the study includes all students who applied for the test of gifted and excellence from the elementary schools in Irbid city. Some of them were admitted into the King Abdullah's schools for excellence and were classified as gifted students while some of them failed the test and were not given the opportunity to join these schools, and were classified as non-gifted students. The study was limited to the following grades: Grades 10 and 11 of gifted and non-gifted students. The sample collected from the gifted students was around 166 students, distributed as follows: Grade 10 (45 males and 46 females); Grade 11 Science Stream (35 males and 40 females).

The sample of non-gifted students was collected based on convenience from the participants of non-gifted students because of the difficulty in getting access to all students. Through a field research, some 110 students were selected and distributed as follows: Grade 10 (29 males and 25 females), Grade 11 (31 males and 25 females). Table 1 shows the distribution of the study sample according to the type of student.

Table 1 Distribution of the study sample according to the type of student

Variable	Number	Average
Type of student	Gifted	55.2%
	Non gifted	44.8%
Total	267	100%

### The Study Instruments:

The researchers used several instruments such as: gifted measurement, metacognitive questionnaire scale and, motivation for achievement measurement The details are as follow:

#### Gifted measurement

The researchers chose the students of King Abdullah II Schools of Excellence as sample of gifted students based on their high scores of 95% or above, and also their successful passing of the test of excellence which was approved by the Ministry of Education.

#### Metacognitive Questionnaire scale

To determine the level of metacognitive thinking skills of the study sample, the researchers used a metacognitive test known as Metacognitive Questionnaire Scale (MQS), which was developed by Khawaldeh (2003), and modified to suit the Jordan Environment. Inappropriate paragraphs were deleted and some adjustments were made so that the test in its final form included 60 items from its original 80 items, and distributed into four areas: Palpable serial, palpable random, abstract serial, and abstract random). These areas are used to measure the level of students' metacognitive thinking skills. There are two types of skills investigated and they are perception (receiving information) which appears in two forms, namely abstract and concrete, and organization of information which appears in two forms as well, namely sequential and random.

Therefore, this test distinguishes between four ways of thinking:

- Abstract: Student receives information as mental concepts.
- Perceived: Student depends on the senses in receiving information.
- Serial: Student deals with information in a logical sequence.
- Random: Student puts the information in a number of ways and uses various means to get a lot of information at one time.

#### Validity of the measurement

To ensure measurement validity, the researchers referred to a number of arbitrators of various specialties from the Faculty of Education Teaching Board and the Department of Arabic in Jordanian universities. Their views on the appropriateness of the measurements used in the study as well as the language and content are checked. The arbitrators

made some modifications in the paragraphs and wording to bring the final modified measurement as follows:

Items before modification	Items after modification
I think of something that has a clear beginning and ending	I think of subjects that have a clear beginning and ending
I organize subject in a collective manner to make them more fit	I organize subject as a whole to make them fit more
I'm keen to understand myself	I know myself

**Reliability of the measurement**

The coefficient reliability of the metacognitive thinking skills was calculated through Test-Retest, and the period for extraction of coefficient consistency using equation Cronbach Alpha between the two tests was three weeks. The coefficient reliability of metacognition thinking skills by way of retest ranged between 79%-85% and the abstract random was found to be less reliable while the abstract serial was highly reliable.

The coefficient reliability by way of internal consistency ranged between 70% -89% and the palpable random was found to be less reliable while abstract random was found to be highly reliable. The coefficient reliability by way of retest of metacognition thinking skills as whole was found to be 81% and by way of internal consistency was 83%. See Table 2.

Table 2: The coefficient reliability of Metacognitive Questionnaire Scale

Scale	The coefficient reliability		number
	retest ranged	internal consistency ranged	
Palpable/serial	0.81	0.77	15
Palpable/random	0.83	0.70	15
Abstract/serial	0.85	0.81	15
Abstract/random	0.79	0.89	15
Metacognitive T.S.	0.81	0.83	60

**Motivation for achievement measurement:**

Through review of previous studies (Kanaan, 2003; Sahloul, 2005; Dlashh, 2006) and with reference to theoretical literature, the researchers developed this measurement which consists of 38 paragraphs. These paragraphs are distributed into five areas: perseverance, competition, self-confidence, realization of the importance of time, and desire to master and enjoy the work. These areas measure the level of students' motivation for achievement.

**Validity of the measurement**

To ensure validity of the measurement, the researchers referred to a number of arbitrators from the Faculty of Education and Arts Teaching Board from Jordanian universities. Their views on the appropriateness of the measurements used in the study as well as language and content are considered. The arbitrators made some suggestions for modification in some paragraphs. Nevertheless, 80% of them endorsed the paragraphs, providing a clear indication of the validity of its contents. For example:

Items before modification	Items after modification
I keep trying until I master the subject I study	I repeat until I master the subject I study
My aim to win relation is better than my colleagues	My aim to establish relation is better than my colleagues
It border me a possibility of failure in a particular study subject	A possibility of failure in a particular study subject makes me panic

**Reliability of the measurement**

The coefficient reliability of motivation for achievement areas was calculated through Test-Retest, and extraction of coefficient consistency using equation Cronbach Alpha. The coefficient reliability of motivation for achievement areas by way of retest ranged between 78%-85% where perseverance was found to be less reliable, while competition was highly reliable.

The coefficient reliability by way of internal consistency ranged between 79% - 88% where completion was found to be less reliable while self-confidence was found to be highly reliable. The coefficient reliability by way of retest of

metacognitive thinking as a whole was found to be 79% and by way of internal consistency was 70%. See Table 3.

Table 3: The coefficient reliability of motivation achievement areas

Area	The coefficient reliability		number
	retest ranged	internal consistency ranged	
Perseverance	0.78	0.87	11
Competition	0.85	0.79	5
Self-confidence	0.84	0.88	8
Realization of the importance of time	0.83	0.87	7
The desire to master and enjoy work	0.82	0.84	7
Motivation for achievement	0.79	0.70	38

### Procedures for correcting measurements

Student responses were converted from measurement paragraphs of 'Strongly Oppose, Disagree, Not Sure, Agree and Strongly Agree' to the following numerical order: 1, 2, 3, 4, and 5, when their answers are positive. The responses were converted to the following order: 5, 4, 3, 2, and 1 when their answers are negative.

#### Variables of the study:

Variables of the study consist of the following:

the independent variable:

Students classified as gifted or non-gifted

Dependent variables:

In correlation between:

Performance on the measurement of metacognitive thinking skills and the performance on the measurement of motivation for achievement or its scope.

#### Statistical treatments:

To answer the first and second questions:

The mean and standard deviations were calculated.

To answer the third question:

A correlation between the areas of epistemological beliefs measurement and the areas of metacognitive thinking was calculated. In addition to the value of Z, an equation was applied to identify the difference between the correlation coefficient of the two independent groups based on the variables: gifted and non-gifted students.

### FINDINGS

The study answers the three questions below:

#### The first question:

What is the level of metacognitive thinking skills of the gifted and non gifted students?

To answer this question, the researchers calculated the means and standard deviations of the study sample responses on metacognitive thinking skills as a whole and the four areas measured. See Table 4.

Table 4: Means and standard deviations scores on the metacognition scale as a whole and its factors

No	metacognitive factors	Student type					
		Gifted			Non gifted		
		Rank	Average	Standard Deviation	Rank	Average	Standard deviation
1	Palpable/serial	3	2.70	0.40	2	2.82	0.43
2	Palpable/random	4	2.34	0.35	4	2.28	0.31
3	Abstract/serial	2	2.76	0.47	3	2.73	0.46
4	Abstract/random	1	2.91	0.44	1	2.91	0.42
	Metacognitive		2.68	0.33		2.69	0.31

It can be seen from Table 4 that the mean scores of gifted and non-gifted students on the metacognitive factors as a whole (serial/palpable, random/palpable, serial/abstract, random/abstract) were 2.68 and 2.69, respectively.

The mean range of the four factors of the gifted students was 2.34-2.91, and the mean range of the non-gifted students was 2.28-2.91.

#### The second question:

What is the level of achievement motivation among gifted and non-gifted students?

To answer this question, the researchers calculated the mean and standard deviations for the areas of motivation for achievement as whole of the gifted and non-gifted students. See Table 5.

Table 5: Means and standard deviations scores on motivation for achievement scale as a whole and its factors

No	Motivation for achievement factors	Student type					
		Gifted			Non gifted		
		Rank	Average	Standard Deviation	Rank	Average	Standard deviation
1	Perseverance	4	3.38	0.38	5	3.45	0.43
2	Competition	2	3.52	0.51	2	3.75	0.56
3	Self-confidence	5	3.38	0.45	4	3.49	0.45
4	Realization of the importance of time	3	3.43	0.44	3	3.55	0.45
5	The desire to master and enjoy work	1	3.75	.54	1	3.84	.34
	Motivation for achievement		2.48	0.31		3.59	0.28

The previous table shows that the mean of the gifted students in the measurement of their motivation for achievement as a whole is 3.480 and non-gifted students, 3.591.

The calculation of these means ranged within the five areas (perseverance, competition, self-confidence, realization of the importance of time, and the desire to master and enjoy work) with gifted students from 3.384-3.754, while non-gifted students, from 3.455-3.840.

#### The third question:

Is there a statistically significant difference at the level of  $\alpha \leq 0.05$  between the correlation in the measurement of metacognitive thinking skills as a whole and the measurement of motivation for achievement based on variables: gifted and non-gifted?

The researchers calculated the two-sided correlation coefficients between metacognitive thinking measurement as a whole and its factors, and motivation for achievement as a whole and its factors. The researchers then converted



calculations to value z to identify the significant difference between gifted and non-gifted students. See Table 6.

Table 6: Linear correlations between metacognition thinking scores and its factors and the motivation for achievement areas and its factors, and the decimal value of z corresponding to them.

First scale	Second scale	Student type	Correlation Coefficient	Indicator	Number	Z Decimal values	Z	Statistically Significance
palpable serial	Perseverance	gifted	0.163	0.051	143	0.165	2.238*	0.013
		Non gifted	-0.118	0.208	116	-0.118		
	Competition	gifted	0.350*	0.000	143	0.365	2.303*	0.011
		Non gifted	0.074	0.429	116	0.074		
	Self-confidence	gifted	0.330*	0.000	143	0.343	2.544*	0.005
		Non gifted	0.021	0.822	116	0.021		
	Realize the importance of time	gifted	0.319*	0.000	143	0.331	1.645*	0.050
		Non gifted	0.122	0.192	116	0.123		
	The desire to master and enjoy work	gifted	0.456*	0.000	143	0.492	3.133*	0.001
		Non gifted	0.096	0.307	116	0.096		
	Motivation for achievement	gifted	0.458*	0.000	143	0.495	3.659*	0.000
		Non gifted	0.032	0.733	116	0.032		
palpable random	Perseverance	gifted	0.096	0.252	143	0.097	0.837	0.201
		Non gifted	-0.009	0.922	116	-0.009		
	Competition	gifted	0.071	0.399	143	0.071	1.313	0.095
		Non gifted	-0.094	0.313	116	-0.095		
	Self-confidence	gifted	0.200*	0.017	143	0.203	0.544	0.293
		Non gifted	0.133	0.154	116	0.134		
	Realize the	gifted	0.144	0.086	143	0.145	1.065	0.143



First scale	Second scale	Student type	Correlation Coefficient	Indicator	Number	Z Decimal values	Z	Statistically Significance
Abstract serial	importance of time	Non gifted	0.010	0.913	116	0.010	1.458	0.072
		gifted	0.306*	0.000	143	0.316		
	The desire to master and enjoy work	Non gifted	0.131	0.161	116	0.132	1.580	0.057
		gifted	0.243*	0.003	143	0.248		
	Motivation for achievement	Non gifted	0.048	0.608	116	0.048	1.345	0.089
		gifted	0.181*	0.030	143	0.183		
	Perseverance	Non gifted	0.013	0.891	116	0.013	2.701*	0.003
		gifted	0.161	0.054	143	0.163		
	Competition	Non gifted	-0.177	0.057	116	-0.179	0.672	0.251
		gifted	0.248*	0.003	143	0.253		
	Self-confidence	Non gifted	0.167	0.074	116	0.168	2.072*	0.019
		gifted	0.262*	0.002	143	0.268		
	Realize the importance of time	Non gifted	0.006	0.947	116	0.006	2.513*	0.006
		gifted	0.502*	0.000	143	0.552		
The desire to master and enjoy work	Non gifted	0.230	0.013	116	0.234	2.809*	0.002	
	gifted	0.400*	0.000	143	0.424			
Motivation for achievement	Non gifted	0.068	0.466	116	0.068	1.028	0.152	
	gifted	0.123	0.144	143	0.123			
Perseverance	Non gifted	-0.007	0.943	116	-0.007	1.667*	0.048	
	gifted	0.140	0.096	143	0.141			
Competition	Non gifted	-0.070	0.454	116	-0.070			
	gifted	0.140	0.096	143	0.141			

First scale	Second scale	Student type	Correlation Coefficient	Indicator	Number	Z Decimal values	Z	Statistically Significance
Meta-cognitive thinking	Self-confidence	gifted	0.263*	0.001	143	0.269	1.980*	0.024
		Non gifted	0.019	0.840	116	0.019		
	Realize the importance of time	gifted	0.204*	0.015	143	0.207	0.238	0.406
		Non gifted	0.175	0.060	116	0.177		
	The desire to master and enjoy work	gifted	0.389*	0.000	143	0.411	2.257*	0.012
		Non gifted	0.124	0.183	116	0.125		
	Motivation for achievement	gifted	0.328*	0.000	143	0.341	2.184*	0.014
		Non gifted	0.064	0.493	116	0.064		
	Perseverance	gifted	0.183*	0.029	143	0.185	1.773*	0.038
		Non gifted	-0.039	0.677	116	-0.039		
	Competition	gifted	0.237*	0.004	143	0.242	2.586*	0.005
		Non gifted	-0.085	0.363	116	-0.085		
	Self-confidence	gifted	0.336*	0.000	143	0.350	1.907*	0.028
		Non gifted	0.108	0.249	116	0.108		
Realize the importance of time	gifted	0.302*	0.000	143	0.312	1.605	0.054	
	Non gifted	0.108	0.247	116	0.109			
The desire to master and enjoy work	gifted	0.531*	0.000	143	0.592	3.099*	0.001	
	Non gifted	0.197	0.034	116	0.200			
Motivation for achievement	gifted	0.462*	0.000	143	0.500	3.379*	0.000	
	Non gifted	0.072	0.440	116	0.073			

From the table, we can see from the values of z, the existence of statistically significant difference at the level of  $\infty \leq 0.05$  in favor of the gifted students. The correlation between the measurement of metacognitive thinking on one hand and measurement of motivation for achievement on the other hand, produces the value of z which stands at

3.379. A statistically significant difference was also found in favor of gifted students in terms of the correlation between palpable/serial and motivation for achievement measurement as a whole and its factors as the values of  $z$  ranged between 1.645-3.659.

The results revealed a statistically significant difference for gifted students in terms of the correlation between abstract/serial scale, and motivation for achievement measurement as a whole (e.g., competition, the desire to master and enjoy work, and realization of the importance of time) which presented the values  $z$  at 2.809; 2.701; 2.513; and 2.072 respectively. There is also a statistically significant difference for gifted students in terms of the correlation between abstract/random and motivation for achievement measurement. competition, the desire to master and enjoy work, and realization of the importance of time. The values  $z$  stand at 2.184; 1.667; 2.257; and 1.980 respectively

With regards to the measurement of metacognitive thinking as a whole there is a statistically significant difference for gifted students based on the correlation with all areas of motivation for achievement except 'realization of the importance of time'. The value  $z$  of this correlation ranged between 1.773 - 3.379.

## DISCUSSION

### Research Question 1:

What is the level of metacognitive thinking skills of the gifted and non-gifted students?

Results showed that the range of mean scores of gifted and non-gifted students on the areas of metacognitive thinking as a whole was homogeneous. To discuss these results, the procedural definition of the gifted and non-gifted students is applied here. Those who have applied for tests of excellence, but failed, were not accepted into the King Abdullah II Schools of Excellence. It may be noted that one of the conditions of testing excellence was that student's cumulative average was above 95%, meaning that gifted and non-gifted students were at the same level for the academic GPA.

However, on the basis of the test, they were classified as gifted and non-gifted. In other words, we can draw an inference that there are similar characteristics among these students. In order to examine the differences among them, we have to make a comparison of more than one variable at the same time through correlation. The study is not trying to prove a significant statistically mean, rather the study aims to find a statistically significant difference on correlation between metacognitive thinking and motivation for achievement and in favor of whom (gifted or non-gifted students).

### Research Question 2:

What is the level of motivation for achievement among gifted and non-gifted students?

Results showed that the means for answers of the gifted and non-gifted in the areas of motivation for achievement ranged from 3.38-3.84. The level in the areas of motivation for achievement was higher than it was for metacognitive thinking skills. This can be attributed to the fact that the role of motivation in the understanding and awareness of students must be very clear to achieve personal goals. The strategies of knowledge vary based on the motivation. Motivation for achievement is one of the factors that contribute to an individual's high mental performance.

### Research Question 3:

Is there a statistically significant difference at the level of  $\infty \leq 0.05$  between the correlation in the measurement of metacognitive thinking skills as a whole and the measurement of motivation for achievement based on variables: gifted and non-gifted?

Results indicated the presence of a statistically significant difference at the level of  $\infty \leq 0.05$  in favor of gifted students in terms of the correlation between metacognitive thinking measurement as a whole, and the measurement of motivation for achievement as a whole. A statistically significant difference was also found in favor of gifted students with a correlation between abstract/random and the measurement of motivation for achievement as a whole and its fields.

A study by Azah (2000) indicates that the development of mental abilities of learners; and development of the capacity on how to think and how they reach solutions to problems they face, help them to think clearly. These developments also make it easier for them to learn and quickly complete tasks at hand with higher efficiency.

Learner awareness and his ability to understand his feelings are important while lack of awareness will leave him under the control of his feelings. It was found that people with higher mental ability are able to understand their feelings better, and more confident in carrying their lives and making their own decisions. The awareness of thinking means the ability to know what you know and what you do not know and this process is known as

metacognition. Many studies have shown that there is a positive correlation between gift and metacognitive and strategies metacognitive available to gifted to choose what they need to accomplish the tasks (Wingenbach,1982).

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