

The level of imaginative thinking among the gifted students in the ninth and tenth grades at the excellence schools in Al-Tafila governorate as well as the relationship of that with self-efficacy among them

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Abstract

This study mainly aimed at identifying the nature of the relationship between imaginative thinking and self-efficacy among the gifted students at the excellence schools in Al-Tafila governorate as well as detecting the statistically significant differences between the level of imaginative thinking and self-efficacy among the gifted students at the excellence schools according to the variables of gender and grade.

In order to achieve the study objectives, the researcher used the descriptive survey approach and the questionnaire was used as the main instrument for data collection. The study sample was chosen by using the method of total survey for the components of the study population that consisted of the ninth and tenth grades students attending regular education at the excellence schools in Al-Tafila governorate with a total of 87 male and female students . the methods of analytical and descriptive statistics were used in order to analyze the data.

The study concluded that the overall degree for imaginative thinking among the gifted students in the study sample was high, where the mean for their estimations was (3.74). The results also showed that the overall degree for self-efficacy among the gifted students in in the ninth and tenth grades at the excellence schools in Al-Tafila governorate was high, where the mean for their estimations was (3.78). The results revealed that there is a positive relationship between imaginative thinking and self-efficacy among the gifted students at the excellence schools in Al-Tafila governorate. In the light of the study results , the study recommended about the necessity of giving teachers the necessary training about using the methods of imaginative thinking in the educational process as well as providing the suitable school and classroom environment for using them.

- **Introduction:**

Imaginative thinking is considered as one of the modern trends in the field of education in general, and particularly in this era that witnesses an enormous information revolution characterized by expansion. The nature of imaginative thinking skills became as one of the educational objectives for all the academic subjects, that play an effective role in the development of thinking among students; the good understanding for the academic subjects requires the students' participation in meditation, observation and imagination as well as surpassing the abstract facts included in the curricula.

The scientists of psychological education contend that imagination is an essential component in the student's life, since it helps them in classification , freedom, as well as connecting his perceptions with his previous experiences. It also helps the students in academic adaptation, where the importance of imagination within the educational process lies in being as a basis for innovation and creativity as well as doing the unusual activities. Imagination represents a virtual environment, whose elements are taken from imagination that isn't limited by

any parameters or knowledge, but it reaches much further and advanced stages in development.

By deducting the previous literature and studies relevant to imaginative thinking, most of them confirmed that students are not interested in imaginative thinking and that teachers still consciously consider the activities and strategies that use in order to help them in developing these mental skills.

Therefore, given the importance of imaginative thinking in improving the educational environment and educational outputs among students, as well as enhancing the attitudes of modern education that students are the center of the educational process in the time which witnesses a decline in the educational outputs in all the academic stages , this study mainly aimed at identifying the level of imaginative thinking among the gifted students at the excellence schools in Al-Tafila governorate and its relationship with self-efficacy among them.

The study problem and questions

Imaginative thinking refers to the ability to invent, create , do the unusual as well as promote the level of thinking and training in order to increase the increase the creative abilities among the students, such as fluency, authenticity and using the mental images to enlarge perceptions. Restricting the level of imaginative thinking among the students is a critical thing , particularly among the gifted students so as to increase their self-efficacy and encourage the process of creative thinking within the educational environments. Based on the previously-confirmed data regarding the importance of imaginative thinking among the students, the study problem is constituted in determining the nature of the relationship between imaginative thinking among the gifted students at the excellence schools in Al-Tafila governorate and its relationship with self-efficacy among them.

The study attempts to answer the following sub-questions:

- 1- What is the level of imaginative thinking among the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate?
- 2- What is the level of self-efficacy among the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate?
- 3- Is there a relationship between imaginative thinking and self-efficacy among the gifted students at the excellence schools in Al-Tafila governorate ?
- 4- Are there statistically significant differences between the level of imaginative thinking among the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate according to the variables of (gender , grade level)?
- 5- Are there statistically significant differences between the level of self-efficacy among the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate according to the variables of (gender , grade level)?

The study importance

The scientific and practical importance of the study lies in :

This study is the first attempt to identify the relationship between imaginative thinking and self-efficacy among the students at the excellence schools in Al-Tafila governorate, as far as the researcher knows, and it is expected to contribute to the following:

- 1- The possibility of making use of the research results with regard to the needed instruments in order to enhance the level of self-efficacy among them.
- 2- Providing the field data about the relationship between imaginative thinking and self-efficacy among the students at the excellence schools in order to improve the educational process.
- 3- This study could be a guide and motive in order to conduct more field studies and researches in relevant subjects about imaginative thinking and its relationship with other variables.

The study limitations

This study was exclusive for the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate, and the study tools were applied during the second semester of the academic year 2017/2018, with a small sample of only 87 students.

The theoretical framework and the previous studies

This part of the study will address the concept of imaginative thinking, its importance, dimensions and the theories explaining it. It also addresses the concept of self-efficacy as well as the previous , as follows:

- The concept and importance of imaginative thinking:

Imagination has been perceived as one of the characteristics of the human intellectual activity since the 17th century AD, it was perceived as a basis for refining and clarifying the creative thinking. Though its nature wasn't evident at that time, it was approved as a generator for innovation and modernization for the human thought (Fink, 1996).

At the recent time , imagination represents a basic and effective element within the system of thought and mental activity; it has a great importance due to its utility in teaching , learning , the ability to visualize and construct imaginative mental thoughts among the learners.

Manu (2007) suggested that imagination is the key generator that leads to the new distinctive ideas, and that imagination refers to the ability to form ideas and mental images about the things and subjects that weren't seen or known in the past; it is a new creative and cognitive process. Heath(2008) suggested that imagination is one of the supra-mental processes, where it enables individuals to go beyond the abstract knowledge and facts and provides them with the potentials for transforming the incomplete ideas into main meaningful ideas . Morosini (2010) suggests that imagination is one of the supra-mental processes that connects the manifestations of memory and different experiences together in order to make a mental construct which is different from the perceived reality. According to the definition in Oxford dictionary, imagination is defined as the ability to make images and thoughts for the subjects and things that are not seen in reality.

In the light of the above, we can conclude that imagination as a basis for the creative and intellectual activity is an important component in all the features related to technical and scientific abilities as well as the technical innovations. Imaginative thinking aims to increase the mind's ability in connecting between the previous experiences and imagination with regard to raising new ideas that contribute to the individuals' self-efficacy.

- The types and characteristics of imaginative thinking.

Imaginative thinking is considered as a basic objective for the educational system, where it represents one of the most important types of thinking and an effective element within the system of thinking and mental activity.

Imaginative thinking is characterized by many traits and features:

- 1- Proving individuals with the opportunity to think in new things that aren't available in reality.
- 2- Imagination contributes to the development of mental visualizations, through which we can explain the different events and activities by clarifying reasons more than causes.
- 3- Imagination develops the ability to get to operation method that explain and promote the different issues.
- 4- Imaginative thinking isn't limited to the gifted people, since all the human beings have different levels of imaginative ability and the variations in these levels determine the level of creative thinking among individuals (Samli, 2011; Folkman, 2013).

Some educational studies showed that imaginative thinking has several abilities, that could be summarized in five consecutive abilities, these are: intuition, effectiveness, discovery, sensual perception, and transformation (Noone and Cartwright, 2006).

As for the types of imaginative thinking, they can be divided into the following main types:

- 1- Recall imaginative thinking: In this type, there is a recall for the mental images that were previously seen without making any modifications. This type depends on the information, knowledge, and experiences that the individual acquires during the periods of learning.
- 2- The creative imaginative thinking: this type depends on combining the mental images for the past experiences as well as producing the new ideas and mental images.
- 3- The anticipating imaginative thinking: this type focuses on the individual's ability to predict the future events, especially those related to achieving a certain idea or objective (Al-Tayeb, 2006).

Liang et al (2012) suggests that imagination has many characteristics, including effectiveness and productivity. Effectiveness is one of the most important practical characteristics of imagination; it mainly refers to innovation and modernity, where imagination is a creative energy that provides the opportunity to invest the previous experiences in making new relationships, considering that the individuals who have the powers of imagination have the ability to create the new opportunities, invest time and provide distinctive ideas and trends. As for productivity, it is a characteristic that is related to the density of mental images that can be produced in limited period of time. The individuals who have imaginative thinking are endowed with a number of skills that include the continuous search for facts through observation and diverse interest in reading, they also have the ability to make conclusions by connecting the different situations. Furthermore, they have the abilities related to deep thinking, meditation, recall, visualization, recognizing and connecting types as well as the ability to express what they have imagined via images, words or related logical drawings (Moustafa, 2012).

Therefore, efforts should be made in order to develop imaginative thinking among students at schools, particularly the gifted ones due to its importance in teaching and learning the different subjects. For this purpose, many models and teaching strategies emerged with the aim of developing imaginative thinking among students at schools within the limits of the school subjects' content.

Systems theory is one of the most important theories that explained the skills of imaginative thinking, where it postulates that imaginative thinking is a number of abilities that focus on processing the visual and spatial data in memory, leading to two types of mental images: the visual mental images and the spatial mental images. This

theory illustrated the process of imaginative thinking by hypothesizing that there is a visual area in the human memory that is like the matrix in the computer, which is responsible for the process of visual perception by transmitting the information from the long term memory to this area. The theory of information retrieval via senses which was set by Neil, implies a clear image about imaginative thinking, were it postulates that mental imaginative thinking refers to retrieving the information stored in the memory in different forms. This theory didn't suggest explanations for the occurrence of the imaginative process, in terms of the activity within the memory as well as the way through which information is transmitted and created in the new form (Neil, 1987).

- **Self-efficacy:**

Self-efficacy is defined as the individual's perception of his ability to deal with the different situations. The individuals who have a high level of self-efficacy expect success and that, in turn, leads them to success in reality, while those who have a low level of self-efficacy would have doubts about their abilities to do the tasks and that, in turn, leads to low levels of expected success; and consequently they would have low self-esteem. The individuals who have a high level of self-efficacy also have verbal and external symbols that reflect success. In other words, the student with high self-efficacy would visualize herself doing well in the exam and can think confidently about her next exam (Bandura, 1994).

Schwarzer (1993) suggests that the importance of self-efficacy with regard to educational practice stems from its impact on the way through which people think and feel; at the emotional level, it relates negatively with the anxiety, depression and low self-esteem, and at the cognitive level, it relates to pessimistic inclination.

Self-efficacy can be defined as the individual's belief or perception for his effectiveness and abilities, based on emotional and cognitive potentials that enable him to manage the academic problems and situations so as to achieve a certain achievement (Al-Zayyat, 2001).

Kananeh and Saleh (2002) defined it as the student's ability to understand his academic self through the positive participation in the educational situations, and to understand his social self through controlling his ideas, feelings, actions, as well as controlling the external events that affect his life, making decisions and setting goals. After reviewing the theoretical literature, self-efficacy can be defined as the individual's ability to understand himself, and understand his emotional, mental and cognitive abilities which help him to face the different life situations, either they are positive or negative, in addition to the efforts that the individual do in order to achieve his goals.

Bandura (1994) suggests that self-efficacy has four main resources: performance accomplishment, vicarious experiences, verbal persuasion, and emotional stimulation.

- **Performance accomplishment:** performance accomplishment refers to the fact that previous success is likely make high expectations in addition to their consequences relating to high sense of efficacy. The employees who succeeded previously in doing similar tasks have more confidence to complete similar tasks in the future (high self-efficacy) than those who didn't succeed (low self-efficacy). Managers and supervisors can enhance self-efficacy through careful recruitment, delegating challenging tasks, professional development, setting goals, as well the supporting leadership and giving rewards in order to improve work.

- **Vicarious experience:** which means that there are chances to observe another person and then to say, "I can do that", if your self-efficacy is high. As for those with low self-efficacy, they would say: "I don't think that

I can do that". When the individual sees that his colleague at work succeeds in doing a certain task, he could have better self-efficacy.

- Verbal persuasion: it refers to the effect that could be achieved through the encouragement and praise from parents and friends (and significant others, such as teachers) on performance expectations . this persuasions includes motivational statements : " try, I know that you can do that" or through feedback about the way of doing a certain task or skill. The impact of verbal persuasion increases in the person was authentic , expert and trusted.
- The psychological and physiological state: reducing the extreme anxiety (emotional stimulation) allows the person to perform accurately and calmly, and that gives a stronger feeling of self-efficacy. Bandura argues that emotional stimulation has an impact on self-efficacy; the person who expects failure or finds that some tasks are demanding is likely to face some physiological symptoms: an increase in heart beats , sweating, headache,...etc. these symptoms vary from one person to another, but if they continued , they may cause a low level of performance.

Self-efficacy is related to some theories of motivation. Edwin Lock and Garry Latham suggest that the theory of setting goals and the theory of self-efficacy are complementary to each other. When a leader sets difficult objectives to his employees, this leads them to higher levels, so that they set higher goals for their performance. The research showed that setting difficult goals to the employees implies that there is confidence in the ability of those individuals.

Among the four resources of self-efficacy, Bandura believes that the most important one is performance accomplishment. Self-efficacy has three dimensions: the size, which refers to the difficulty of the task which the individual thinks that he can achieve; the energy, which represents the individual's belief about the size, either as strong or weak; and generalization, which refers to the degree of generalizing the expectations across the different cases. The employee's feeling affects his perception, motivations, and performance. We rarely attempt to do a certain task when we expect that it won't be successful. Self-efficacy affects learning and performance via three ways (Lunenberg, 2011):

- 1- self-efficacy affects the objectives that students choose for themselves; where the students with low level of self-efficacy tend to set relatively low objectives for themselves . On the contrary, the person who has high self-efficacy is likely to achieve high personal objectives. Researches show that people don't only learn, but they also advance to levels that match their expectations about their self-efficacy.
- 2- self-efficacy affects learning and the efforts that students do in their work. The students with high self-efficacy do their best in order to learn the ways for doing new tasks because they are certain that their efforts will succeed. The students with low self-efficacy may do less efforts when learning and doing complex tasks because they are uncertain whether their efforts will lead to success.
- 3- self-efficacy affects reliability among the students who attempt to do new and complex tasks. The students with high self-efficacy are certain that they can learn and do a certain task; therefore, they are likely to continue in doing their efforts despite the problems that may appear. On the contrary, the students with low self-

efficacy, who are uncertain about their ability to learn and do the difficult tasks are likely to give up when facing problems.

After a thorough review for the literature of self-efficacy, (Bandura and Locke, 2003) concluded that self-efficacy is a vital factor in the academic performance.

- The theories explaining self-efficacy:

1- Choice theory and reality therapy:

This theory was developed by William Glasser (1982) and suggests that the human being is responsible for his selected behavior, whether it was positive or negative, in response to his internal needs, such as surviving, affiliation, power, freedom, and humor. The behavior represents the individual's attempt to satisfy his needs and achieve better control on his own life as well as the surrounding environment in a manner that corresponds with this satisfaction. The right behavior is the behavior which includes the criteria of rightfulness and reality which stem from self-efficacy and resiliency as well as making advantage of experts. Responsibility is considered as a key concept in Glasser's theory (Al-Zoyoud, 1998).

2- Social learning theory:

This theory was developed by Albert Bandura (1971), who also offered the concept of self-efficacy. The individuals with high self-efficacy expect success, and they have an imagery and verbal symbolization that reflects success. self-efficacy is considered as one of the basic elements of social-cognitive theory. The human behavior in Bandura's theory is unified by the interaction of three factors: the personal factors, environmental factors, and behavioral factors. These factors were named as the model of mutual inevitability, and were said to form the individual's thoughts about his abilities and attitudes (Bandura, 2003).

3- Maslow's hierarchy of needs:

Maslow suggests that the human beings always seek to achieve themselves; he also argues that the human being is good in nature and able to develop healthy methods if he has the opportunity to detect his abilities and express them. Maslow developed a hierarchy for the human needs, implying that when these needs aren't satisfied, the human being feels anxious, and so the individuals are directed towards achieving the physiological needs in the hierarchy base that should be satisfied before the other needs of affiliation, love, respect and self-actualization (Sharf, 2012).

Previous studies

By reviewing the literature, we can see that there are many studies that addressed imaginative thinking and self-efficacy and their relationship with other variables, such as:

Lin et al (2014) conducted a study which aimed at identifying the impact of innovation and imagination on academic performance among the students of designing major in the Thai universities. The study used the survey approach and also used the questionnaire which was applied to the study sample that consisted of 271 students, who were chosen from 4 Thai universities. The study employed the scale of creative ability and the scale of imaginative ability. The results showed that imagination functioned as an effective and mediator factor between imagination, innovation and academic performance. The results also showed that imagination has a positive indirect impact on academic performance.

Fink (1996) conducted a study which aimed at identifying the relationship between imaginative thinking and creativity. The study was based on the fact that the individual's behavior in terms of imagination and thinking can be explained through two manifestations: the generating stage through which the cognitive structures of the individuals are formed, and the discovery stage in which the individual depends on the cognitive structures in order to form the creative thinking. The study results showed that imagination and creative thinking are significantly related to the cognitive structures that are formed during the generation stage, while imagination and creative thinking are related to meta-cognition during the discovery stage.

Liang et al, (2012) conducted a study which aimed at identifying the impact of environmental factors on enhancing imagination in the different educational stages. The study used the social survey approach and also used the questionnaire in order to collect data. The study sample consisted of the students of Information Technology studying at East-Asia universities. The study results showed that environmental factors has variant effects on enhancing imagination in the three stages of educational designing process. Furthermore, the social atmosphere has a considerable impact on enhancing imagination, followed by the institutional reality and finally the physical component. The results revealed that the impact of these factors is more evident during the second stage of educational design.

Al-Rifou' (2009) conducted a study entitled by : " the relationship of perceived self-efficacy with the ability to solve problems. The researcher used two instruments: the scale of perceived self-efficacy and the scale of the ability to solve problems that was adapted to the Jordanian environment. The study sample consisted of 320 male and female students from Al-Tafila Technical University. The results showed that the level of perceived self-efficacy was high, while the level of the ability to solve problems was medium. The results also showed that there are statistically significant differences between the mean degrees for the sample individuals on the scale of the ability to solve problems attributed to gender. The results also showed that there is a statistically significant relationship between the mean degrees for the sample individuals on the scale of perceived self-efficacy and their degrees on the scale of the ability to solve problems.

Kana'neh (2012) conducted a study which aimed at identifying the impact of perceived self-efficacy as well as its relationship with ambition level and academic attainment. The study sample consisted of 320 male and female students from Akka District, the researcher used the scale of perceived self-efficacy and the scale of ambition level. The results showed that there is a statistically significant positive relationship between the perceived self-efficacy and ambition level among the students, while there are no statistically significant differences regarding the coherence of the correlation relationship due to the impact of academic attainment as well as between perceived self-efficacy and ambition level.

Al-Basil (2015)conducted a study entitled by : " the cognitive motive and its relationship with perceived self-efficacy among the students of the preparatory stage in the city of Nazareth with regard to the variables of gender and class" . The researcher used two instruments: the scale of cognitive motive and the scale of perceived self-

efficacy. The study sample consisted of 312 male and female students from the city of Nazareth. The results showed that the level of cognitive motive and perceived self-efficacy among the students was high. The results also showed that there are statistically significant differences regarding the level of cognitive motive attributed to gender in favor of the females, while there are no statistically significant differences regarding the level of self-efficacy among the students due to the grade level. The results showed that there is a statistically significant positive correlation relationship between cognitive motive and perceived self-efficacy.

Iroegbu (2015) conducted a study entitled by "self-efficacy and job performance: the theoretical framework for Albert Bandura model, reviewing results, explanation and the instructions for future research". The study aimed at investigating the relationship between self-efficacy and job performance using the social cognitive theory for Albert Bandura as theoretical framework. The study sample consisted of 280 individuals. The results were variant among the studies, where some results showed that there is a positive relationship between self-efficacy and job performance, while other results showed that there is a negative relationship between them. Therefore, the social cognitive theory for Albert Bandura include important explanations regarding the world of work and performance in the organizations. However, they don't necessarily work in isolation, as they work in coherence with the other organizational variables in order to enhance the optimal organizational performance.

- **Comments about the previous studies:**

By reviewing the previous studies of imaginative thinking and self-efficacy, we can see that the majority of them confirmed the relationship between imaginative thinking and other variables, such as attainment among the students as well as the efficacy in solving problems. We can also notice that there is a diversity in the studies that addressed self-efficacy and their relationship with some variables, such as feeling of loneliness, social support as well as others. This study is distinct from the previous studies, in that it mainly aimed at identifying the level of imaginative thinking and its relationship with self-efficacy among the gifted students at the excellence schools in Al-Tafila governorate in the Hashemite Kingdom of Jordan.

Methods and procedures

The study methodology

The study used the descriptive survey approach due to its compatibility to the study nature, where this approach describes the phenomenon accurately in order to obtain qualitative and quantitative data about the targeted phenomenon.

The study population and sample

The study population consisted of all the students in the ninth and tenth grades at the excellence schools in Al-Tafila governorate, with a total of 96 male and female students (the directorate of Al-Tafila governorate, 2018). In order to choose the study sample individuals, the researcher used the total survey approach for all the study population, where the study tool was applied to 93 male and female students who agreed to participate in this application. After applying the instrument, 91 questionnaire were returned, from which 4 questionnaire were excluded as they weren't valid for statistical analysis, and so the final sample consisted of 87 male and female

students; 90.63% of the study population.

Here is a display for the characteristics of the study sample, where table (1) shows the relative distribution for the study sample according to the variables of gender and grade level.

Table (1): Frequencies and percentages for the distribution of the study sample individuals according to gender and grade level

Variable	Category	Frequency	Percentage (%)
Gender	Male	40	45.98
	Female	47	54.02
	Total	87	100
Grade level	Male	42	48.28
	Female	45	51.72
	Total	87	100

Table 1 shows that the male students constituted 45.98% of the study sample while the female students constituted 54.02% of the study sample. As for the distribution of the sample according to grade level, the student of the 9th grade constituted 48.28%, while the student of the 10th grade constituted 51.72%.

- The instrument:

The questionnaire was used as the tool for collecting data from the study sample, given the nature and objectives of the study that adopted the approach of social survey which contributes in achieving the study objectives and answering its questions. The researcher used the scientific principles in preparing the study instrument and verified its validity and reliability according to the following procedures:

- Constructing the study instrument:

The study instrument was developed and designed according to the study objectives and questions , the researcher also reviewed the relevant literature and theoretical framework for the previous studies and made advantage of the perspectives of the those specialized in this area.

The questionnaire consisted of the following parts:

- The first part: the data related to the sample individuals, including (gender, grade level)
- The second part: it consisted of 10 items that measure the imaginative thinking among the students in in the ninth and tenth grades at the excellence schools in Al-Tafila governorate.
- The third part: it consisted of 15 items that measure the self-efficacy among the students in in the ninth and tenth grades at the excellence schools in Al-Tafila governorate.

- The validity and reliability of the study instrument:

- 1- The apparent validity:

The apparent validity of the study instrument was verified by introducing it to a number of arbitrators from the

faculty members in the faculties of educational sciences if some Jordanian universities , and considering the notes of modification that were agreed upon by 80% of those arbitrators.

2- Construct validity (internal consistency):

The construct validity of the study instrument was verified by applying it to the exploratory sample consisting of 30male and female students from the basic stage outside the study sample. Construct validity was verified by calculating Pearson correlation coefficient between the responses of the exploratory sample for the items regarding each domain and the total degree for the domain to which it belongs. Table 2 illustrates the results.

Table (2): correlation coefficients between the items and the total degree for the domain of imaginative thinking among the students

Item number	correlation coefficients	Item number	correlation coefficients
1	**0.41	6	**0.49
2	**0.48	7	**0.43
3	**0.52	8	**0.46
4	**0.59	9	**0.40
5	**0.42	10	**0.42

- statistically significant at (0.01)

Table 2 shows that the correlation coefficients between the degrees of each item of the first domain of the study instrument relating to measuring the level of imaginative thinking among the students with the total degree of the domain range between (0.40- 0.59), which are considered as statistically significant at (0.01), indicting the verification of the construct validity for the first domain of the study instrument.

Table (3): correlation coefficients between the items and the total degree for the domain of self-efficacy among the students

Item number	correlation coefficients	Item number	correlation coefficients
1	**0.52	9	**0.51
2	**0.63	10	**0.63
3	**0.69	11	**0.60
4	**0.54	12	**0.58

5	**0.67	13	**0.61
6	**0.50	14	**0.68
7	**0.58	15	**0.63
8	**0.63		

- statistically significant at (0.01)

Table 3 shows that the correlation coefficients between the degrees of each item of the second domain of the study instrument relating to measuring the level of self-efficacy among the students with the total degree of the domain range between (0.50- 0.69), which are considered as statistically significant at (0.01), indicating the verification of the construct validity for the first domain of the study instrument.

The reliability of the study instrument

In order to verify the reliability of the study instrument, Cronbach Alpha was calculated for the responses of the exploratory sample individuals, so as to determine the degree of domains reliability for the study instrument. The results were as follows:

Table (4):Cronbach Alpha coefficient for the domains of the study instrument

Domains	Items number	Cronbach Alpha
The 1 st domain: imaginative thinking level	10	0.84
The 2 nd domain: self-efficacy level	15	0.90
Total	25	0.92

Table 4 shows that the instrument has a high level of reliability, where the total reliability coefficient was 0.92, and the reliability values for the study instrument domains ranged between (0.84-0.90), indicating high level of reliability for the study instrument.

The methods of statistical processing

The responses to the items of the study instrument domains were classified for the second and third parts according to Likert 5-point scale, as follows:

1- Very high	Represents (5 degrees)
2- High	Represents (4 degrees)
3- Medium	Represents (3 degrees)

4-	Low	Represents (2 degrees)
5-	Very low	Represents (1 degree)

Taking into consideration that the mean values for the total degree of the domain will be used to account for the means as follows:

High	Medium	Low
3.68-5	2.34- 3.67	1- 2.33

Base on the above , if the value of the average mean of the item or r the domain more than (3.68), then the level is high. If the value of the average mean range between (2.34- 3.67), then the level is medium, and if the value of the average mean range between (1- 2.33), then the level is low.

The study addressed the field data using the software related to statistical analysis, in particular (SPSS), where the researcher used the descriptive and analytical statistical methods, including:

- 1- Descriptive statistics measures: these were used to describe the characteristics of the study sample, based on frequencies, and percentages. In order to answer the study questions and identify the relative importance for study instrument domains, the researcher used the means and standard deviations.
- 2- Pearson correlation coefficient.
- 3- T-tests for independent samples.

Introducing the study results

First the results relating to the first question:

"What is the level of imaginative thinking among the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate?"

In order to answer the question, the researcher calculated the means and standard deviations, as well as the overall level and order for the estimations of the study sample for the items of the first domain, as well as the domain in total. Table 5 shows the results.

Table (5): The means and standard deviations, and order for the estimations of the study sample for the items of imaginative thinking among the students

Item number	Items	Mean	Standard deviation	Order	level
8	Often, my ideas and experiences are the focus of my imagination	3.98	0.97	1	High
5	I always set time for the activities that I will do	3.96	0.95	2	High
1	I can usually imagine and understand the requirements of the new stages in my life	3.87	1.10	3	High
10	I usually express my imagination in new ways that attract others	3.79	0.97	4	High

4	I usually think too much in the activities that I will do	3.74	0.98	5	High
7	I usually use new ways of thinking in order to implement the things that I should do	3.71	1.21	6	High
3	I can set an imagination for the duties that I have to do according to their importance	3.65	1.02	7	Medium
6	I invest my time in doing in setting imagination to face the problems that tackle me	3.61	1.09	8	Medium
9	I can develop my ideas about the imagination that I visualize	3.61	1.21	9	medium
2	I can quickly focus on imagination and I prevent myself from getting confused	3.48	1.14	10	medium
-	Total degree	3.74	1.06	-	High

Table 5 shows that the overall level for the estimations of the study sample for the items of imaginative thinking among students was high, where the mean for their estimations was (3.74) with a standard deviation of (1.06). As for the level of items, 6 items gained high estimations, these are(8,5,1,10,4,7) which are ordered according to the level of imaginative thinking among the students, and their means ranged between (3.71-3.98). the other items gained medium estimations (3,6,9,2) in consequent order and their means ranged between (3.48- 3.65). Considering the previous results, it is noticed that the students within the study sample have a high level in imaginative thinking, where the results showed that the students concentrate on their experiences and thoughts in building their imaginative thinking , they have the appropriate time for doing their activities, they have the ability to imagine and understand the demands of the new stages in their life, they express their imagination in new ways that attract others, and they have the ability to develop their ideas through the imagination that they visualize. The high level of imaginative thinking among the students of the 9th and 10th grades can be attributed to the nature of their age category, which is the beginning of the youth and maturity stage as well as what accompanies it from intellectual requirements in order to face the challenges that tackle them.

Second: the results relating to the second question

What is the level of self-efficacy among the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate?

In order to answer the question, the researcher calculated the means and standard deviations, as well as the overall level and order for the estimations of the study sample for the items of the second domain, as well as the domain in total. Table 6 shows the results.

Table (6): The means and standard deviations, and order for the estimations of the study sample for the items of self-efficacy among the students

Item number	Items	Mean	Standard deviation	Order	level
6	I can understand the problems that I face quickly	4.09	1.19	1	High
13	I feel happy when achieving my objectives	4.02	1.10	2	High
1	I easily make friends	3.90	1.06	3	High
15	I'm pleased with others opinion about me in order to recognize my mistakes	3.89	1.16	4	High
12	I make use of others' experiences in developing myself	3.84	1.19	5	High
2	I think that I have a considerable role in the community where I live	3.82	1.21	6	High
10	I feel that my friends trust my decisions	3.81	1.18	7	High
3	I find it easy to deal with my colleagues	3.77	1.06	8	High
5	I have the ability to deal with unexpected life events	3.76	1.24	9	High
11	I can achieve my goals	3.75	1.17	10	High
9	I can overcome my feelings of anxiety	3.67	1.13	11	Medium
7	I can control my emotions	3.65	1.20	12	Medium
4	I easily cope with the individuals that I don't know	3.56	1.15	13	Medium
8	I set my future plans and get ready for them	3.49	1.09	14	Medium
14	I'm interested in mutual conversation during free discussions	3.06	1.20	15	Medium
-	Total degree	3.78	0.98	-	High

Table 6 shows that the overall level for the estimations of the study sample for the items of self-efficacy among students was high, where the mean for their estimations was (3.78) with a standard deviation of (0.98). As for the level of items, (10) items gained high estimations, these are(6,13,1,15,12,2,10,3,5,11) which are ordered

according to the level of self-efficacy among the students, and their means ranged between (3.75-4.09). the other items gained medium estimations (9,7,4,8,14) in a consequent order and their means ranged between (3.06-3.67).

Considering the previous results, it is noticed that the students within the study sample have an acceptable level in self-efficacy, where the results showed that the students have diverse ideas about the way of dealing with problems, and they know what to do in the unexpected situations . The acceptable level of self-efficacy among the students of the 9th and 10th grades can be attributed to the nature of their age category, which is the beginning of the youth and maturity stage as well as what accompanies it from social, emotional and physical changes that may impede their ability to develop their skills and to get into academic requirements that are different from the previous educational stages, which may positively impact on raising their self-efficacy.

The previous results for both males and females may be interpreted based on the general social and academic conditions that are responsible for shaping and enhancing self-efficacy are shared conditions for both genders, especially at the end of the primary stage. Despite the difference in the characteristics of the study sample, students in general have external resources that contribute to making the self-efficacy. The males depend on the assessment of their peers , while the females may depend on the assessment of their families. In conclusion both males and females find the resources that contribute to making the self-efficacy. These findings match with the results of some previous studies , such as (Kananeh, 2012), which revealed that self-efficacy among the students is within the average of the total degree. They also correspond with the findings of (Al-Rifou' AlQarah and Al-Qaisi, 2009) which revealed that self-efficacy increases among the students with the progress in the grade levels, and the student also have more ability in achieving psychological adjustment.

Third: the results relating to the third question

Is there a relationship between imaginative thinking and self-efficacy among the gifted students at the excellence schools in Al-Tafila governorate ?

In order to answer this question, Pearson correlation coefficient was calculated between the imaginative thinking and total self-efficacy among the students. Table 7 shows the results.

Table (7): The results of Pearson correlation coefficient test to measure the relationship between imaginative thinking and self-efficacy among the gifted students at the excellence schools in Al-Tafila governorate

Variable	Self-efficacy	
	correlation coefficient	
imaginative thinking	*0.654	0.00

- statistically significant at (0.05)

Table 6 shows that there is a positive relationship between imaginative thinking and self-efficacy among the gifted students at the excellence schools in Al-Tafila governorate, where the value of correlation coefficient between the overall level of thinking and self-efficacy among students was 0.654 which is statistically significant

at (0.05).

This result can be interpreted by the fact that the students who have acceptable levels of self-efficacy, also have acceptable levels of imaginative thinking and self-satisfaction, and they can make good relationships with others, and so they easily disclose themselves in the different domains, whether at the academic level or social level or with regard to inclinations and attitudes. Such individuals are satisfied and accepted by others . they can also overcome the challenges that impede their desires. Therefore, their life history is full of successful relationships and experiences. These events will inevitably have a role in promoting the attainment level in the academic courses. In this vein, Bandura suggested that the relationships that the students acquire during their openness to others as well as disclosing their attitudes and problems in front of others are considered as main resources that would increase their self-efficacy.

Indeed, the students in the excellence schools who find solutions for their academic , social and familial problems would gain positive benefits that affect their adjustment, and so they have more ability in facing pressures and find it easier to plan and focus on the objectives that should be achieved. Consequently, they have more ability regarding imaginative thinking and innovation as well as acquiring new skills , so their self-efficacy increase and they would have confidence in themselves and in their abilities to express themselves and discuss the problems that may face them within the school environment.

Fourth: the questions related to the fourth question

- Are there statistically significant differences between the level of imaginative thinking among the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate according to the variables of (gender , grade level)?
- The differences regarding gender:

In order to detect the differences between the means for the estimations of the study sample for the level of imaginative thinking among the students regarding gender, the researcher performed T-test for the independent samples, and table 8 shows the results.

Table (8): The results of t-test for testing the significance of differences between the level of imaginative thinking among the students regarding gender

Gender	Mean	Standard deviation	T value	Statistical significance
Male	3.70	0.87	0.447	0.52
Female	3.79	1.02		

Table 8 shows that there are no statistically significant differences in the level of imaginative thinking among the students in the ninth and tenth grades at the excellence schools in Al-Tafila governorate regarding gender, where t value was 0.447, which is not statistically significant at (0.05).

Considering these results, we notice that there is a considerable convergence between the estimations of the study sample for the level of imaginative thinking among the students, and this may be attributed to the fact that the students of both genders face nearly the same academic pressures in terms of the studying conditions and the

family structure.

- The differences regarding grade level:

In order to detect the differences between the means for the estimations of the study sample for the level of imaginative thinking among the students regarding grade level, the researcher performed T-test for the independent samples, and table 9 shows the results.

Table (9): The results of t-test for testing the significance of differences between the level of imaginative thinking among the students regarding grade level

Grade level	Mean	Standard deviation	T value	Statistical significance
Ninth grade	3.58	0.87	*4.66	0.00
Tenth grade	4.09	0.96		

- statistically significant at (0.05)

Table 9 shows that there are statistically significant differences in the level of imaginative thinking among the students in the ninth and tenth grades at the excellence schools in Al-Tafila governorate regarding the variable of grade level, where the calculated (t) value was 4.66 , which is statistically significant at (0.05). the differences were in favor of the 10th grade students where their mean responses was (4.09) in comparison with (3.58) for the 9th grade students.

This result may be attributed to the nature of the 10th grade students who are more interested in the subject of imaginative thinking , and they pass through a critical stage where they devote all their effort and time for studying.

Fifth: the results relating to the fifth question

Are there statistically significant differences between the level of self-efficacy among the students of the 9th and 10th grades at the excellence schools in Al-Tafila governorate according to the variables of (gender , grade level)?

- The differences regarding gender:

In order to detect the differences between the means regarding gender, variance of analysis test was conducted, and table 10 shows the results.

Table 10

The results of t-test for testing the significance of differences between the level of self-efficacy among the students regarding gender

Gender	Mean	Standard deviation	T value	Statistical significance
Male	3.80	0.87	0.85	0.38
Female	3.72	0.69		

- statistically significant at (0.05)

Table 10 shows that there are no statistically significant differences in the level of self-efficacy among the

students in the ninth and tenth grades at the excellence schools in Al-Tafila governorate regarding gender, where (t) value was 0.85, which is statistically significant at (0.05).

- The differences regarding grade level:

In order to detect the differences between the means regarding grade level, variance of analysis test was conducted, and table 11 shows the results.

Table (11):The results of t-test for testing the significance of differences between the level of self-efficacy among the students of 9th and 10th grades regarding grade level

Grade level	Mean	Standard deviation	T value	Statistical significance
Ninth grade	3.60	0.74	*3.75	0.00
Tenth grade	4.04	0.62		

- statistically significant at (0.05)

Table 11 shows that there are statistically significant differences in the level of self-efficacy among the students in the ninth and tenth grades at the excellence schools in Al-Tafila governorate regarding grade level, where (t) value was 3.75 , which is statistically significant at (0.05). the differences were in favor of the differences were in favor of the 10th grade students where their mean responses was (4.04) in comparison with (3.60) for the 9th grade students.

This result may be attributed to the nature of the 10th grade students who are more interested in the subject of self-efficacy , and they pass through a critical stage and devote all their effort and time for improving their personal characteristics.

Recommendations

In the light of the results, the study recommends about:

- 1- Creating a school environment that enhances imaginative thinking among students.
- 2- Including the academic curricula with programs for developing imaginative thinking among students, where there would be more focus on the activities and exercises included in the educational lessons.
- 3- Holding training workshops that are specialized for students in the domain of preparing programs for developing imaginative thinking so that they would recognize the concept of imaginative thinking as well as its skills and strategies.
- 4- Promoting self-efficacy among students at schools by holding activities an training programs that refine their personality, based on the new methods of education.

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