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# Differences Between Female Gifted And Non-Gifted Students In Future Thinking Skills From The Perspective Of Students And Teachers

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*Abstract*

The study aims to identify the differences in future skills between female gifted and non-gifted students with regard to future expectation, problem-solving, perception, and prediction, from the perspective of secondary level students and teachers at Hafr Al-Batin. To achieve objectives of the study, the researchers adopted the mixed approach of interpretative design to collect data via a questionnaire and an interview. The study sample was selected from the Center of the Gifted at Hafr Al-Batin. It comprised (80) female students, of whom (40) were gifted and the other (40) were non-gifted, in addition to (19) teachers. The results revealed that there were differences with statistical significance at the function level (a ≤ 0.05) between the gifted and the non-gifted in the overall degree of the questionnaire and in all the previously mentioned thinking skills in favor of the gifted from the perspective of both students and teachers.

**Keywords:** Future thinking skills; Gifted students'; Hafr Al-Batin; Teachers.

## Introduction

Taking care of the gifted students was and still is a major objective of education that occupies a remarkable position in research, especially when the issues of educational development and boosting skills and abilities of the gifted in this age, which is characterized by drastic changes in all aspects of life, are discussed. Therefore, caring for such students has become an urgent need to create a generation that can keep pace with scientific and accelerating developments in all fields of life. Such a thing needs non-traditional thinkers who have high skills that cope with the developments of the age. Thus, the interest in developing skills of gifted students at all stages

of education was focused on by modern researchers (Sayyed & Omari, 2021: 251).

(Jianhua, 2022: 35) points out that teaching the gifted requires using influential strategies and methods to cope with developments of the 21st century and to meet its needs by developing students' future thinking skills that help them to predict problems of the modern age.

Future thinking is one of the important skills of the 21st century that attracts more attention to meet the fast scientific and technological developments of the age. It also helps prepare gifted students to face the new in technology through thinking in a scientific and predictive manner that helps them to predict and solve future problems before they occur by using innovative techniques which secure a better future for them and for their community (Al-Shashaa & Ajami, 2022: 55). (Bin Zakaria, Bin Ahmed & Bin Spawi, 2017) added that it is necessary to allow the gifted to take part in educational development programs that enrich their future thinking skills. Such a thing dictates choosing the activities and educational tasks that develop such skills, solve future problems, and predict developments before they occur. If teaching and developing future thinking is necessary for learners at all stages of education, then it is essential for the gifted students, being one of the foremost factors to develop numerous skills and potentials of the gifted (Oteibi, 2020:323).

Developing the skills and capabilities of the gifted requires boosting their future thinking, as it is one of the most important modern trends in this age; it helps them adapt themselves to the accelerating developments in all fields of life (Darabkeh, 2018: 58).

(Barak, 2017) pointed out that it is important to teach gifted students future thinking skills and the skills of the 21st century, which include the following: to adapt to frequent changes, to deal with uncertain situations, to cooperate and communicate with others in different environments, to generate knowledge and manage information and finally, to encourage discovery and innovation.

Developing future thinking skills in gifted students helps them solve future problems and increase their positive thinking. The study by (Ballah, 2022) revealed that there was a positive correlation between the skills of future-solving problems and positive thinking of the gifted at the secondary level in the Kingdom of Saudi Arabia (KSA).

It is important for gifted students to acquire future thinking skills because they help them to keep pace with scientific developments and to solve future

problems that distinguish this age. Therefore, the current study will attempt to specify the differences between gifted and non-gifted students in future thinking skills from the perspective of both students and teachers.

**Statement of the problem**

Teachers of gifted students should be aware of the importance of providing them with a suitable educational environment because such students learn better in the milieu where the learner is considered pivotal in the teaching process. The environment also triggers scientific research, individual and group investigation, opinion independence, posing deep and strange questions, and, finally, helps in the development of future thinking skills.

It is necessary to discover and care for the gifted during the early stages, for they have their own special inclination and necessaries. They need developed curricula, additional activities, and projects throughout the academic stages to cope with their needs and potential. In addition, that helps them develop constructive future thinking and encourages them to generate creative ideas (Hong, Jung & Jihyun, 2017).

Despite the great interest which has recently emerged regarding gifted teaching, they still suffer because they are taught in classes, the majority of which are with normal mental abilities, compared to the gifted. Therefore, these abilities are not attended to by the teacher whose aim is to teach the general curriculum since the largest segment of the class needs to learn basic skills of learning and to cover the pre-set scientific material. Due to that, the teacher ignores the cognitive and creative needs of the gifted student who can master the scientific material in a very short time. Therefore, he learns a little from school, but that never helps develop higher thinking skills in him (Ceylan, 2020). Although developing future learning skills is important for students in general and the gifted in particular, some studies found that some teachers lack the ability to develop these skills; in addition, they are not included in students' syllabi. This is what (Mashal, 2020) came up with after examining the performance level of math teachers of the secondary level in the Jouf area. The study by (Naeem & Shalhoub, 2022) concluded that the expectation skill ranked the "highest" in math books but rated "medium." It was followed by future perception skill, which ranked "low," then future problem solving, which also ranked "low," and, finally, the prediction skill ranked "very low," with regard to the inclusion of teaching skills that develop future thinking.

Huweiti study (2018) concluded that the skills of future perception and future prediction ranked "medium" for the students of the faculty of education and arts at Tabouk University.

What preceded reveals how important it is to tackle the topic of future thinking skills of gifted and non-gifted students. Therefore, the statement of the problem might be outlined in the following question: "What are the differences between the gifted and non-gifted students with regard to future thinking skills from the perspective of students and teachers?"

**Questions of the study**

The current study gives answers to the following questions:

1- What are the differences between gifted and non-gifted female students with regard to future thinking skills (future expectation, problem-solving, future perception, and future prediction) from the perspective of secondary-level students?
2- What are the differences between the gifted and non-gifted female students with regard to elements of future thinking skills included in question one from the perspective of secondary-level teachers?

**Objectives of the study**

The study attempts to achieve the following:

1- To identify the difference between gifted and non-gifted students in the skills of future thinking with all its elements from the perspective of secondary-stage students.
2- To specify the differences between the two groups of students with regard to future thinking skills with all its elements from the perspective of secondary-stage students.

**Significance of the study**

The significance stems from the following:

**First, Theoretical significance**

The following outlines this type of significance.

1- It is hoped that the current study enriches the theoretical literature on future thinking skills.
2- It is also hoped that the study provides information and concepts related to differences pertaining to the level of future thinking skills the gifted and non-gifted students have.
3- The study might improve the teaching process in general, and that of the gifted in particular, through developing the future thinking skills they have.

**Second, The practical significance**

This might be outlined in the following:

1- It is hoped that the study provides people in charge of curricula in the kingdom with information about the level of future thinking skills the gifted and non-gifted students have, as that might encourage them to include such skills in the curricula.
2- It is also hoped that the findings of this study shed light on the importance of developing future thinking skills in the two types of students. Such a thing encourages researchers to conduct studies to integrate their results with those of this study regarding developing future thinking in the students.
3- It is hoped that this study helps people in charge of programs of vocational development in the Ministry of Education to design programs specialized in developing the skills of male and female teachers and in acquiring methods by which they can develop future thinking skills of the students.
4- This study gets in line with the national strategic requirements emanating from the national transformation plan that is based on the 2030 vision, whose goal is to advance the country through its distinguished and gifted children of public schools.

**Study limitations:**

Objective limitations: The study tackles the differences between gifted and non-gifted students with regard to future thinking skills from the perspective of both students and teachers of the secondary stage.

**Space limitations:**

The center of the gifted and public schools at Hafr Al-Batin.

**Time limitations:**

Second semester of the academic year 1444 A.H.

**Human limitations:**

Gifted and non-gifted students of the secondary stage, besides teachers.

**Research terminology:**

**First: Future thinking**

It is defined as a logical mental effort based on prediction and expectation which aims to detect the occurrence of future events and design alternative new strategies to solve different problems (Shashaa & Ajami, 2022: 59). Procedurally, future thinking is, in this research, defined as the ability of the

secondary-stage female students at Hafr Al-Batin to expect, predict, perceive future, and solve future problems through projecting an integrated picture of future events that were measured by future thinking scale used in this study.

**Second: Gifted students**

The Saudi Ministry of Education defines the gifted to be the students with abnormal abilities who are distinguished from their peers in the performance of one or more than one field the society appreciates, especially mental excellence, innovative thinking, academic achievement skills, and personal capabilities (Directory of the gifted, 2016).

The American Society for the Gifted defines the gifted to be the person who shows advanced levels or has the ability to show an exceptional level of performance in one field or more from the following: general mental ability, special academic readiness, creative thinking, leadership capability, and visual or art performance (Mohammed, 2016: 536).

Procedurally, the gifted female students in this study are defined as those who have abnormal capabilities and readiness and are distinguished, in performance, from their peers in one or more fields that the society appreciates, such as mental excellence, creative thinking, academic achievement, skills, and personal capabilities.

**Theoretical Framework and literature review**

This part of the research handles the theoretical framework and literature review. It is divided into two axes: the first tackles future thinking, while the second tackles the gifted-female students. It also tackles the literature relevant to this study.

**First: Theoretical framework**

**First axis: Future thinking**

It is one of the foremost types of thinking that students in general and the gifted in particular need to acquire and develop because it is one of the important trends of the age that one can't live without. It also helps individuals to cope with the accelerating changes of this world. Thus, predicting the future makes people live confidently and plan for a better future (Huweiti, 2018: 128). Future thinking creates educated people who are distinguished for creativity, ability to absorb and skillfully deal with sources of information, ability to predict and anticipate the future, and finally, create the scenario for a better future (Darabkeh, 2018: 57).

Future thinking implies perceiving and expecting possible future events. It is the individual's ability to creatively perceive the indefinite future scenarios which makes him comprehend and assess future information. It is thus the future image the individual perceives, believes in, or even expects (Tasi & Lin, 2016: 177).

**Definition of future thinking**

The definitions concerned with the concept of future thinking varied in accordance with the interests of writers, authors, and researchers. The most important definitions are The ability to create new hypotheses to come up with new correlations by using the available information, searching for new solutions, adjusting hypotheses, reformulating them if necessary, proposing alternatives, and drafting results (Hafeth, 2015: 30). It is also defined as the process by which the individual comprehends the development of past events through the present into the future to understand the nature of change, based on the various information he has and analyzes to understand the future (Huweiti, 2018:129)—defined it as a mental, logical, and creative activity that identifies the course of human's life from past to present into the future. This can never be inevitable or decisive, but probable. It depends on the method the thinker abides by without any commitment to any method that might lead to incorrect expectations.

(Qahtani, 2020:6) defined it as the process of perceiving and collecting information about different issues, including the problems that need to draft proposed future solutions by providing alternative future ones. (Hussein & Gabr, 2022: 1564) defined it as the individual's ability to think of himself and future events through the future perception of himself, planning for the future, and dealing with future expectations.

From what preceded, one can conclude that future thinking is a mental activity through which various mental habits are used to plan for the future, predict and anticipate it, and solve future problems by using past information and analyzing them to achieve a better future.

**Future thinking skills**

Future thinking skills are considered a higher type of skill. Though they were not explained or developed in curricula, they proved to be necessary to train teachers on them so as to apply them in the teaching process. Future thinking should concentrate on the integration of 21$^{st}$-century skills. It should also concentrate on creating a generation that thinks outside the box and, contributes to progress innovation, and gets knowledge from various sources (Change & Ariffin, 2023).

There are a few skills that distinguish future thinking from other types, among which are the following:

**First: future planning skill**

It is the person's ability to prepare clear future plans and the stages he will go through with regard to future issues. It aims to achieve the following: reinforcing and developing collective work, learning problem-solving skills, raising knowledge levels, showing more interest in the future, and planning for it (Huweiti, 2018:130).

Shashaa & Ajmi (2022:56) added that future planning skills enable the individual to anticipate and hypothesize solutions for current problems benefitting from domestic and international experiences. It also enables him to predict and think about what might happen in the future.

**Second: Future perception skill**

It is an individual's ability to interpret facts in a way that leads to life improvement. In this type of thinking, facts are used to solve present and future problems. In other words, to perceive things and events which were not parts of an individual's past experiences (Jaafar & Jabouri, 2021).

Ballah, (2022: 101) points out that future perception skill is a process of thought flow that can be heard, felt, or tasted through mental images the individual creates in his mind. In other words, it is an internal expression of experiences and interests. It is a way of cyphering information and expressing them. It is also the tool with which minds interact.

It might be finally said that the future perception skill is one of the mental skills which unveil a student's ability to think imaginatively and to blend that with what is expected to happen in the future by correlating past and present thoughts unexpected to happen in the present time but might possibly occur in the future.

**Third: Future-problem solving skill**

It is the skill that helps the individual to find a solution for a certain problem or issue or a hurdle that prevents him from achieving his goal. It is used to identify, analyze and put down strategies that assist him to find solutions for problems that hinder his progress in different aspects of life (Qahtani, 2020:7).

Hafeth, (2015: 36) adds that the future-problem solving skill is used to put down strategies with the purpose of solving a difficult question, complicated situation, or any problem that hinders progress in any aspect of life. The

following sub-skills fall under this skill (exact determining of the problem, getting important information, jotting down observations, putting down problem-solving criteria, determining and applying procedures, assessing alternatives used for the solution, and issuing a judgment.

It might be said that the future-problem solving skill helps any person: to perceive problems, draft new hypotheses come up with correlations through the available information, seek solutions, adjust and develop the hypotheses, and provide alternatives to come up with the desired results.

**Significance and Benefits of future thinking**

Future thinking is one of the most important types of thinking needed for the current age. It is the safety collar for a happier life ad a better future. Its benefits are multifarious that include the following:

- It helps in putting down future plans based on the ability of the individual to analyze the past, understand the present, and predict the future.
- It helps make correct decisions based on scientific, organized thinking.
- The individual can hypothesize and provide alternative solutions for any problem.
- The individual is free to choose an alternative solution from the many available ones.
- It helps the individual to correctly use his perception of the past and analyze the present to come up with the correct decision to face future problems.

(Alt, Kapshuk, &Dekel, 2023) indicated that future thinking is very much needed now than ever before because of global changes, technological revolution, and the necessity to use innovative strategies which the students harnessed to suit the changing reality, to predict future problems they might encounter, and to innovate creative solutions to those problems.

**Second axis: Talented female students**

There are numerous definitions for the term talented. The foremost is that of the national society, whose definition states that the talented is the person who has exceptional potential in the performance of one or more of the following fields: general mental ability, certain academic readiness, creative thinking, leadership abilities, whether visual or practical (Hasan, 2017: 107).

(Rasheedi, 2022: 19) defines talented to be students who have remarkable abilities which make them achieve a high level of performance in many fields; they are professionally qualified and concerned people.

The current study adopts the following definition: Talented female students are those who have distinguished abilities that public education can't absorb. Therefore, special programs which sponsor and develop such distinction should be provided so as to help them serve themselves and their community. This distinction might be observed in one of the following fields: intelligence, academic achievement, creativity and productive thinking, leadership abilities, and visual or artistic abilities (Elsamanoudy & Abdelaziz, 2020: 821).

**Qualities of the talented students**

The talented student is one of the important fortunes the society depends on for future development in an age of rapid change. Therefore, her future thinking skills need to be developed. To achieve that, gifted students should be provided with services and methods of teaching that cope with their potential to develop and refine their abilities by which they would be able to face and keep pace with future development in society. Previous studies like that of (Sultan & Harbi, 2021) indicated that the gifted was not given the care propitious to their abilities. Several qualities distinguish them, among which are the following:

**First: Cognitive and mental qualities**

These qualities are seen in the abilities the gifted have better than others in early reading, linguistic knowledge, accomplishing academic assignments at a fast speed, and the distinguished ability to concentrate on minute details (Oteibi, 2021: 344).

Among the cognitive and mental abilities the gifted have which distinguish them from others are the following:

- Love for reading at an early age.
- Ability to deduce, generalize, comprehend meanings, think logically, and perceive relationships.
- Ability to accomplish mental work in an extraordinary way.
- Good achievement level in reading, math, arts, literature, and science, but not in history, spelling, and handwriting.
- Quick learning, memorizing, excellence in academic achievement, intelligence, high percentage
- Organizing ideas in a way that facilitates expressing them well.
- Enjoying story reading and writing poetry.
- Love for knowledge and using the library effectively. (Mahmoudi, 2019: 144).

**Second: Emotive and behavioral qualities**

The gifted enjoy high motivation for accomplishment, are loved by their peers, and are optimistic, but don't share much in popular activities due to their hypersensitivity (Sayyed & Omari, 2021: 292).

**Third: Social and emotive qualities**

The gifted enjoy certain qualities that might embarrass teachers; these are shown in frequent interruption, ignoring the responsibilities of others, discussion manipulation, the complaint about class routine, rejecting instructions and cooperating with others, correcting adults in an inappropriate manner, and rebellion against norms and traditions (Rashidi, 2022: 193).

Abu Hannood, (2021: 15) pointed out that the most important positive social and emotive qualities the gifted have are reflected in emotional stability, self-independence, and the ability to play a leadership role at the social level in all stages of the study. The love humor that appears in verbal communication, in drawing, writing, or comments, without offending anybody. They show great sensitivity toward what goes around them in family, school, and society. they generally feel upset and happy with situations that sound ordinary for the non-gifted. They are also less vulnerable to mental and nervous disorders than ordinary students.

**Fourth: Somatic qualities**

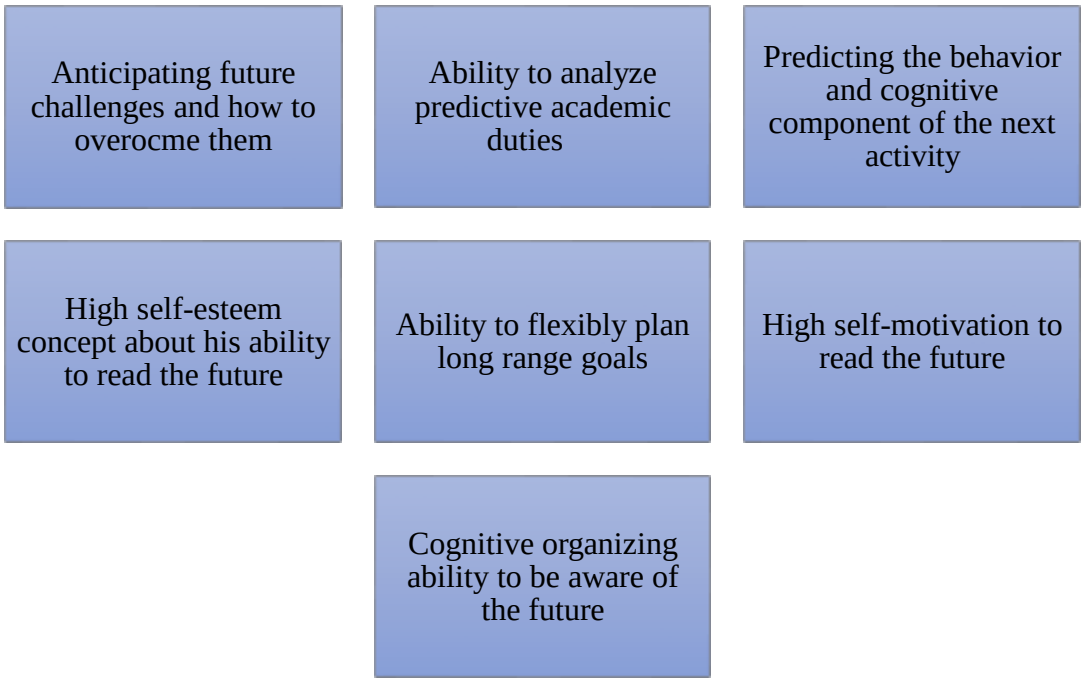
Somatically, the gifted grow differently from their ordinary peers, despite the fact that the maturity process relatively differs from one gifted to another.

But still, it is influenced by genetic and environmental factors reflected in these qualities. Zahrani, (2020:187) pointed out that the most important somatic qualities are seen in the gifted high capacity to work and in rapid growth, similar to early walk and talk.

It is noted from what preceded that the gifted female student enjoys mental and cognitive abilities that excel her peers. She is also distinguished for certain emotional, social, and physical qualities. Therefore, their teachers should take all that into consideration and develop those qualities by giving them a chance to lead educational, social, and cultural activities in school.

**Requirements that enable the gifted to master future thinking skills**

Darabkeh (2018: 59) refers to a number of possible requirements of future-thinking efficiency of gifted students outlined as follows:




**Second: Literature review**

Through reviewing the relevant literature on future thinking skills, the researchers list down the foremost among them are organized in ascending order as follows:

The study by Darabkeh (2018) aimed to compare the level of future thinking skills of gifted and non-gifted students. To achieve its objectives (70), students were selected (35) were gifted from the school of King Abdulla II School for the Gifted, while the other (35) were non-gifted. The researcher adopted the descriptive approach and the future thinking scale. The study concluded that the level of future thinking of the gifted ranked "High," while that of the non-gifted was "Medium."

The study by (Huweiti, 2018) aimed to identify the degree the students of the faculties of education and arts at Tabouk University have with regard to future thinking skills. To achieve its objectives, the researcher adopted the descriptive approach and used a future thinking scale for collecting data. The study sample comprised (193) male and female students. The results of the study revealed that the degree the student got pertaining to future planning skills and future problem solving was "high", but the degree of future prediction and perception skills they got was "Low".

The study by (Carbee,2020) discussed the impact of future problem-solving on the administration of gifted. To achieve its objectives, the two researchers adopted the qualitative approach. The study was applied to a sample of (11) gifted participants in a program of future problem-solving. An interview was

used as a tool for the study. The findings revealed that the program helped with problem-solving, decision-making, leadership skills, and collective work skills.

The study by (Qahtani, 2020) aimed to identify the efficacy of a training program based on future thinking in developing academic achievement motivation in a sample of students from Muata University. To achieve the objectives, the experimental approach was adopted. (70) Male and female students were selected and divided into two groups, experimental and control. The motivation scale and a training program on future-thinking skills were used. The findings revealed that there were differences between the two groups on the scale in favor of the experimental group, whose members were subjected to training.

The study by (Zahrani, Dhaimat & Shahin, 2020) aimed to identify the efficacy of a future problem-solving program (FPSP) in developing the creative thinking of the gifted. To achieve the objectives of the study, the researchers used the quasi-experimental approach. The study was applied to (24) students who were divided into two groups, experimental and control. They used a future problem-solving program in addition to a creative thinking scale. The results showed that the program was effective in developing those skills. There were also differences between the performance of the two groups regarding overall creative thinking with its various dimensions. The program provided unique skills that were compatible with the needs and qualities of the gifted. Thus, it helped develop collective- work skills by providing them with skills that broadened their thinking and improved their talents.

The study by (Jaafar & Jubouri, 2021) aimed to identify the hindrances in the way of developing future thinking skills of intermediate-level students from the perspective of history teachers in Iraq Muthana Governorate. The sample of the study comprised (308) male and female teachers. The descriptive approach and a questionnaire were the sources for collecting data. Results of the study revealed that there were obstacles to a high degree that hindered the development of thinking skills in students of the intermediate level from the perspective of teachers of history.

The study by Naeem and Shalhoub (2022) aimed to identify the degree of future thinking skills inclusion in math books of the secondary stage in the Kingdom of Saudi Arabia (Natural sciences track). To achieve that, the content-analysis card of (21) skills was used. The findings revealed that the expectation skill was the highest included in those books, with a “Medium” degree, followed by future perception skill with a “Low” degree, and future

problem-solving skill also rated "Low." Finally, the prediction skill was last with a "Very low" degree.

The study by (Jianhua, 2022) aimed to identify teaching gifted students future thinking skills that take into consideration the 21st-century requirements and societal knowledge, which became the foundation for developing new skills in future education. To achieve that, the analytical approach that analyzes the results of the previous studies concerned with developing future thinking skills in gifted students was adopted. The study concluded that future teaching and student skill development in accordance with the approach of knowledge building contribute to the development of future thinking skills in gifted students and to future problem-solving as well.

**Commentary on the previous studies**

From what preceded, it was clear that the ability of some teachers to develop future skills was weak, including the skills in students' curricula, which was weak as well, as concluded by (Mashaal, 2020). The study by Naeem and Shalhoub, (2022) concluded that the expectation skill was the highest included in math books with a "Medium" degree, then future perception with a "Low" degree. The skill of future- problem-solving got a "Low" degree as well. Finally, the prediction skill got a "Very low" degree. The study by Huweiti (2018) concluded that the degree students of the faculties of education and arts at Tabouk University got pertaining to future perception and expectation was "Medium." The researchers below outline the points of agreement and disagreement with the previous studies as elaborated on in the current one as follows. It agreed with the study by Darabkeh, (2018) with regard to identifying future thinking skills in gifted and non-gifted students; with the study by Gahtani (2020) and Jaafar and Jubouri in using the questionnaire as a tool for collecting data; with the studies of Huweiti, (2018) and Darabkeh, (2018) regarding sample selection from students and teachers. But, the current study disagreed with all previous ones in the approach it opted for, the mixed approach; with all previous studies as well in using the interview as another means for benefitted from the previous ones in questionnaire design, axes of future thinking skills, theoretical framework, in addition to results comparison.

**Study procedures**

**First: study methodology:**

This study adopted the mixed approach because it suits its topic and objectives. Through the approach, the quantitative data was collected, analyzed, and interpreted the questionnaire items addressed to gifted and

non-gifted students. The qualitative data was gained by the interview applied to female teachers of the secondary stage at Hafr Al-Batin.

**Study population:**

The population comprised all female gifted and non-gifted students in the schools of Hafr Al-Batin during the second semester of the academic year 1444 A.H.

**Study sample:**

The sample comprised (80) students, (40) of them were gifted, and the other (40), non-gifted. The sample also included (18) teachers of the secondary stage with whom an interview was conducted; half of them were teachers of the gifted, and the other half were of the non-gifted. Table (1) illustrates the distribution of the sample.

**Table (1): Distribution of the study sample**

| Variable | Variable dimensions | No. | Percent |
|---|---|---|---|
| Students | Gifted students | 40 | 50% |
| | Non-gifted students | 40 | 50% |
| | **Total** | **80** | **100%** |
| Teachers | Teachers of gifted students | 9 | 50% |
| | Teachers of non-gifted students | 9 | 50% |
| | **Total** | **18** | **100%** |

Table (1) shows that the number of students was (80), (40) of them were gifted, and the other (40) were not. The number of teachers was (18), (9) of them teach the gifted, and the other (9) teach the non-gifted.

**Tools of the study**

The following tools were used to collect data for the study

**First, Questionnaire**

A questionnaire on future thinking skills was addressed to the gifted and non-gifted students of the secondary stage. The researchers designed it taking into consideration what follows:

- Reviewing the literature concerned with the future thinking skills of gifted and non-gifted students.
- Constructing the questionnaire's items and axes in its initial form.
- Presenting the questionnaire to a group of judges specialized in curricula and giftedness.

- Amending the questionnaire to meet judges' comments and have it in its final form.
- In its final form, the questionnaire comprised the following two parts:
  First part: This includes initial data about non-gifted students.
  Second part: This includes questionnaire items on future thinking that cover (27) items divided into the following four dimensions, future expectation, which includes (7) items; future problem-solving dimension, (8) items, future perception (6) items, and finally future prediction, (6) items.

**Validity of the questionnaire**

The questionnaire was verified for validity through the following procedures.

**First: Validity of arbitrators**

The questionnaire was submitted to the supervisor in its initial form to ensure correct language, clarity of meaning, and suitability of items to the section to which they belong. Propitious suggestions and amendments that might develop the questionnaire were taken into consideration.

**Second: Internal consistency**

The questionnaire was applied to the study sample. After collecting data, Pearson's correlation coefficient was computed with regard to questionnaire items and the overall score to which each belongs, as presented in Table (2).

**Table (2): Pearson's correlation coefficient and its statistical implications for the items of future thinking skills**

| Dimension | Item | Coefficient | Item | Coefficient | Item | Coefficient | Item | Coefficient |
|---|---|---|---|---|---|---|---|---|
| Future expectation | 1 | *0.564 | 3 | **0.754 | 5 | **0.712 | **7** | **0.699 |
| | 2 | **0.737 | 4 | *0.529 | 6 | *0.554 | | |
| Problem-solving | 1 | *0.564 | 3 | **0.754 | 5 | **0.743 | 7 | *0.552 |
| | 2 | **0.737 | 4 | *0.529 | 6 | **0.709 | 8 | **0.681 |
| Future perception | 1 | **0.712 | 3 | *0.598 | 5 | **0.687 | | |
| | 2 | **0.749 | 4 | *0.533 | 6 | **0.718 | | |
| Future prediction | 1 | **0.793 | 3 | **0.758 | 5 | **0.724 | | |
| | 2 | **0.808 | 4 | **0.740 | 6 | **0.720 | | |

** Functional at the level 0.01

*Functional at the level 0.05

Table (2) shows that the correlation coefficients between items and the total score of future thinking skills were suitable for scientific research purposes, for it was functional at the function level (0.05).

**Questionnaire validity**

The questionnaire on future thinking skills and its sub-dimensions was verified by using Cronbach Alpha, as explained in Table (3).

**Table (3): Validity coefficient values of the various dimensions of future thinking skills according to Cronbach Alpha**

| Dimensions of the Questionnaire of future thinking skills | The Cronbach alpha validity coefficient |
|---|---|
| Future expectation | 0.84 |
| Future problem solving | 0.85 |
| Future perception | 0.82 |
| Future prediction | 0.84 |
| **Total degree (general validity)** | **0.86** |

Table (3) reveals that the validity coefficient, according to Cronbach alpha, was propitious for future thinking skills. The lowest validity coefficient was that of future perception (0.82), while the highest was that of future problem-solving (0.85). The total score of the validity coefficients was (0.86) which was quite suitable for scientific research purposes.

**Grading the questionnaire for future thinking skills**

The questionnaire comprised (27) items, each of which has three levels: "Low" = (1) point, "Medium" = (2) point, and "High" = (3) points as presented in Table (4).

**Table (4): Degree agreement according to Likert 5-point scale**

| No. | Degree of agreement | Arithmetic mean |
|---|---|---|
| 1 | Low | 1 – 1.66 |
| 2 | Medium | 1.67- 2.33 |
| 3 | High | 2.34 – 3.00 |

**Second: Interview**

The researchers used the interview as a means for collecting qualitative data directly from (19) teachers of the gifted center and secondary schools of Hafr Al-Baitn. It was key to identifying what and how teachers view the differences between students with regard to future thinking. The importance of this tool can be outlined in the following:

- It is a good idea to measure the differences between gifted and non-gifted students regarding future thinking.

- It provides in-depth and explicable information.
- It is useful for detection and confirmation.

**Validity of the interview**

To verify the validity of the interview, the form was sent to a group of professors specialized in the field of curricula and talent in Saudi universities to examine questions, validity, and suitability to achieve interview objectives.

**Reliability of the interview:**

To verify reliability, the researchers used the following strategies:

- Extend and intensify fieldwork: The researchers spent a long time with the gifted students to know more about their problems by taking notes through voice recording using Transcriptor Application.
- Have multiple researchers: The researchers benefitted from an additional one who was subjected to intensive training and filed discussions through which they can generate new ideas, agree on meanings, and come up with results after several consultation sessions.
- Reanalyze the recorded data to enhance data reliability and results.

**Statistical methods adopted**

The current study used several statistical methods like the Statistical Package for Social Sciences (SPSS) to ensure the following:

**First: To confirm the validity and reliability of the study questionnaire using the following:**

1- Pearson Correlation Coefficient to confirm internal consistency.
2- Cronbach Alpha to confirm validity.

**Second: In answering questions of the study, the following were used:** Frequencies, Percents, Means, and Standard deviations to explore the differences pertaining to future thinking between the viewpoints of the gifted and non-gifted secondary-level students.

**Third: verifying validity and objectivity of the qualitative data**

The researchers used Holste equation to verify qualitative analysis through three analysts. The answers were reanalyzed after three weeks. This is known as validity through time measured by this equation. 2 X number of ideas analysts agreed upon ÷ Total thoughts of both times = 302 X ÷ (47 + 49 = 96). The resulting validity coefficient, according to the Holste equation, is (0.652), which is ok.

**Analysis and interpretation of study results**

The following shows the study results that the researchers came up with by presenting answers of sample members to the two study tools, statistical processing of the results, and analyzing them in light of the theoretical framework and studies concerned with differences between gifted and non-gifted students in future thinking skills. The answers were discussed as follows:

**Results pertaining to the first question**

The first question reads, "What are the differences between the gifted and non-gifted female students with regard to future thinking skills with its domains from the perspective of secondary-level students?

To determine such differences, arithmetic means, and standard deviations pertaining to the dimensions of future-thinking skills were computed, as shown in Table (5).

**Table (5): Means and deviations of the two groups on the questionnaire of future thinking skills**

| Dimensions of a motivation test | Group | No. | Mena | Std deviation | Skill level |
|---|---|---|---|---|---|
| Future expectation | Gifted students | 40 | 2.70 | 1.67 | High |
| | Non-gifted students | 40 | 2.15 | 1.34 | Medium |
| Future problem solving | Gifted students | 40 | 2.63 | 1.51 | High |
| | Non-gifted students | 40 | 2.23 | 1.39 | Medium |
| Future perception | Gifted students | 40 | 2.66 | 1.64 | High |
| | Non-gifted students | 40 | 2.32 | 1.14 | Medium |
| Future prediction | Gifted students | 40 | 2.67 | 1.49 | High |
| | Non-gifted students | 40 | 2.30 | 1.64 | Medium |
| Questionnaire total score | Gifted students | 40 | 2.66 | 1.49 | High |
| | Non-gifted students | 40 | 2.25 | 1.64 | Medium |

The results in Table (5) reveal that the level of future thinking of the gifted was "High" for all dimensions, while for the non-gifted was "Medium" for all dimensions. To determine whether the differences between the means of the two groups were statistically functional, "T-Test" was used.

**First: Results pertaining to the total score of future thinking skills.**

Table (6) presents such results.

**Table (6): T-test results of comparing means of the two groups, gifted and non-gifted, pertaining to total score of future thinking skills.**

| Group | No. | Mena | St Deviation | Freedom Score | (T) value | Function level |
|---|---|---|---|---|---|---|
| Gifted students | 40 | 2.66 | 1.49 | 79 | 5.839 | 0.002** |
| Non-gifted students | 40 | 2.25 | 1.64 | | | |

Table (6) shows that there are differences with statistical significance at the function level (a ≥ 0.05) between the two groups in the total score of future thinking skills in favor of the gifted students. The mean of the gifted was (2.66), while that of the non-gifted was (2.25); the (t) value was (5.839), which is statistically significant at the level (0.002).

**Second: Results pertaining to future expectation dimension**

Table (7) illustrates such results

**Table (7): (T) test results of comparing means of the two groups, gifted and non-gifted, pertaining to future expectation dimension**

| Group | No. | Mena | St Deviation | Freedom Score | (T) value | Function level |
|---|---|---|---|---|---|---|
| Gifted students | 40 | 2.70 | 1.67 | 79 | 4.673 | 0.001** |
| Non-gifted students | 40 | 2.15 | 1.34 | | | |

The results in Table (7) reveal that there were differences with statistical significance at the function level (a ≥ 0.05) between the two groups with regard to future expectation dimension in favor of the gifted students. The mean of the gifted was (2.70), while that of the non-gifted was (2.15). The (T) value was (4.673), which is statistically significant at the level (0.001).

**Third: Results pertaining to the dimension of future problem solving**

Table (8): illustrates such results.

**Table (8): (T) test results of comparing means of the two groups pertaining to future problem-solving dimension**

| Group | No. | Mena | St Deviation | Freedom Score | (T) value | Function level |
|---|---|---|---|---|---|---|
| Gifted students | 40 | 2.63 | 1.51 | 79 | 4.904 | 0.004** |
| Non-gifted students | 40 | 2.23 | 1.39 | | | |

The results in Table (8) reveal that there were differences with statistical significance at the function level (a≥ 0.05) between the two groups in favor of the gifted students, whose mean was (2.63), while that of the non-gifted was (2.23). The (T) value was (4.904), which is statistically significant at the level (0.005).

**Fourth: Results pertaining to future perception**

Table (9) presents these results.

**Table (9): T-test results of comparing means of the two groups pertaining to future perception dimension**

| Group | No. | Mena | St Deviation | Freedom Score | (T) value | Function level |
|---|---|---|---|---|---|---|
| Gifted students | 40 | 2.66 | 1.64 | 79 | 5.116 | 0.008** |
| Non-gifted students | 40 | 2.32 | 1.14 | | | |

The results in Table (9) reveal that there were differences with statistical significance at the function level (0.05) between the gifted and non-gifted students pertaining to the dimension of future perception in favor of the gifted group, whose mean was (2.66), while that of the non-gifted was (2.32). The (T) value was (5.116), which is statistically significant at the level (0.008).

**Fifth: Results pertaining to future prediction dimension**

Table (10) illustrates such results.

**Table (10): (T) test results of comparing means of the two groups pertaining to future prediction dimension**

| Group | No. | Mena | St Deviation | Freedom Score | (T) value | Function level |
|---|---|---|---|---|---|---|
| Gifted students | 40 | 2.67 | 1.49 | 79 | 4.961 | 0.006** |
| Non-gifted students | 40 | 2.30 | 1.64 | | | |

The results presented in Table (10) indicate that there were differences with statistical significance at the function level (a ≥ 0.05), pertaining to future prediction dimension, between the two groups in favor of the gifted, whose mean was (2.67), while that of the non-gifted was (2.30). The (T) value was (4.961), which is statistically significant at the level (0.006).

Results of the previous studies found that there were differences with statistical significance between gifted and non-gifted students in future thinking skills with all its domains in favor of the gifted. This might be attributed to the mental abilities the gifted students have. Such a result agrees with what Oteibi (2021:344) came up with that these students have abilities better than others in early reading, high ability to concentrate, perseverance, etc. This result of the current study also agrees with the study by (Darabkeh, 2018), who concluded that gifted students have a level of future thinking higher than that of the non-gifted.

**Results pertaining to the second question**

The second question reads, "What are the differences between gifted and non-gifted female students with regard to elements of future thinking skills included in question one from the perspective of secondary-level teachers? (19) teachers were interviewed, and the results were as follows:

**Dimension of future expectation:**

The following points were noted in this respect.

- Gifted students expect future events quite distinctively.
- Gifted students look to the future in a creative unfamiliar way.
- They possess a good ability to anticipate the future.
- Non-gifted students look to future developments indistinctively.
- Logical thinking of the future obsesses non-gifted students.
- Non-gifted students have a low level of future expectations.
- They also have difficulty of reading the future and have poor expectations of future events.

**Future problem-solving dimension**

In this domain, the researchers noted the following:

- Gifted students are able to find solutions for future problems.
- They are quite sensitive, and that is reflected in their ability to anticipate future problems.
- They show a strong cognitive desire to know the future through thinking over the problems expected to occur.
- Non-gifted students feel distressed about finding solutions for future problems.
- They poorly anticipate the occurrence of future problems.
- They focus on present problems, not on future ones.

**Future perception dimension**

The researchers outline the major issues of this domain in the following:

- The gifted students have a broad imagination to anticipate the future.
- In dealing with the future, science fiction dominates their thinking.
- They practice imagination to determine their future.
- Non-gifted students are stereotypical in their look to future events.
- Science fiction never affects the thinking of non-gifted students.
- They rarely practice imagination to determine their future.

**Future prediction dimension**

The researchers outline the major issues of this dimension in the following:

- Gifted students are able to predict the future by dealing with current events.
- Their future perception is based on knowledge.
- They adapt themselves to future anticipated events.
- Non-gifted students are unable to predict the future.
- Their look to the future is superficial and cognitively shallow.
- Their adaptability to anticipated future developments is less than that of their gifted counterparts.

**Conclusion**

Through the discussion presented in the study, the researchers found, according to the first tool, the questionnaire, that there were differences between the gifted and non-gifted students in all domains of future thinking skills. Moreover, the findings of the interview also revealed that there were differences between the gifted and non-gifted, from the perspective of teachers, in all domains of future thinking skills. Such differences might be attributed to teachers' awareness of the potential gifted and non-gifted students have. The teachers accumulated that knowledge from experience and qualities of the gifted students the teachers have been aware of.

**Recommendations**

In light of the findings the study came up with, the researchers would like to recommend the following.

1- To prepare training courses for teachers of gifted students to train them on how to develop future thinking skills in such students and how to benefit from that in the teaching process.
2- To use strategies that help develop thinking skills in general and future thinking skills in particular in teaching gifted students.
3- To intensify creative thinking activities and train students on how to solve future problems by including that in the curricula, for it will greatly impact their future development skills in them.

4- To measure the higher thinking skills of gifted students in general and future thinking in particular, but not to examine only the cognitive side of their thinking.

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