

**INVESTIGATING METACOGNITIVE THINKING
SKILLS ON PROBLEM SOLVING RELATED TO
SOCIAL PROBLEMS AMONG GIFTED STUDENTS
IN SAUDI ARABIA**

by

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**KAJIAN KEMAHIRAN BERFIKIR METAKOGNITIF TENTANG
PENYELESAIAN MASALAH SOSIAL DALAM KALANGAN PELAJAR
PINTAR DI ARAB SAUDI**

ABSTRAK

Kajian ini mengkaji kemahiran berfikir metakognitif tentang penyelesaian masalah sosial dalam kalangan pelajar pintar di Arab Saudi.. Responden kajian terdiri daripada 480 pelajar pintar dari wilayah Jeddah. Empat puluh pelajar diambil daripada setiap kelas; kelas pertengahan pertama, kelas pertengahan kedua dan kelas pertengahan ketiga. Tambahan pula 50% daripada 240 sampel yang mengandungi pelajar pintar lelaki pintar adalah sama dengan jumlah 50% daripada 240 sampel yang inagudugi pelajar pintar perempuan. Protokol soal selidik dan temu bual merupakan instrumen utama yang digunakan dalam mengumpul data daripada pelajar tersebut yang masing-masing menyumbang data kuantitatif dan data kualitatif. Analisis statistic yang berbeza digunakan bagi menganalisis data yang dikumpul. Hasil menunjukkan perkaitan, kesan dan pengaruh kemahiran berfikir metakognitif bagi penyelesaian masalah berkaitan masalah sosial dalam kalangan pelajar pintar Arab Saudi pada tahap kajian yang berlainan, sub-kumpulan dan mengikut jantina bagi pelajar pintar sekolah pertengahan dan sekolah menengah. Cadangan dan sokongan berdasarkan hasil kajian akan memanfaatkan hala tuju pelajar pintar, kementerian pelajaran, antarabangsa dan organisasi bukan kerajaan dalam usaha meningkatkan pembelajaran pelajar pintar di Arab Saudi.

**INVESTIGATING METACOGNITIVE THINKING SKILLS ON PROBLEM
SOLVING RELATED TO SOCIAL PROBLEMS AMONG GIFTED STUDENTS
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ABSTRACT

This study examined metacognitive thinking skills on problem solving social problems among gifted students in Saudi Arabia. The respondents in this study consist of 480 gifted students from the province of Jeddah. Forty students were taken from each class; first intermediate class, second intermediate class and third intermediate class from the province of Jeddah. Similarly, forty students were taken from each class; first secondary class, second secondary class and third secondary class from the province of Jeddah. Moreover, 50% (240) of the sample are male gifted students and 50% (240) of the sample are female gifted students. Questionnaire and interview protocols were the main instruments used in collecting data from the selected gifted students which generated the quantitative and qualitative data respectively. Different statistical analysis were used in analyzing the collected data. The results demonstrated the relationships, effects and influence of metacognitive thinking skills for problem solving related to social problems among Saudi Arabian gifted students at different level of study, sub-groups and with respect to gender for the intermediate and secondary schools gifted students. The suggestion and recommendations based on the study findings would benefit the gifted student's centers, educational ministry, international and non-governmental organizations in the effort to improve the study learning conditions of gifted students in Saudi Arabia.

CHAPTER ONE

INTRODUCTION

1.1 Introduction

Adolescence is one of the most important stage of human life progression, this is because of the major changes in many aspects of adolescence life such as physical, mental, cognitive and social (Esteki & Moinmehr, 2012). Changes in Cognition is considered as one of the major changes of adolescence by extending their own knowledge to learn metacognitive skills continuously for solving problems (Berg, 2011)

Metacognitive thinking skills are the techniques used by students to understand the learning processes. It is a systematic process to 'think' about their 'thinking' (Eilers & Pinkley, 2006). Metacognitive strategies are used after using cognitive strategies that boost up their rate of learning, progress and academic achievement (Chan, 1996; Dignath, Buettner, & Langfeldt, 2008). Therefore, it is very important to know how gifted students utilize these strategies and what types of effects they put on them in return. In connection with the metacognitive thinking skills, every person faces many problems on daily basis that can be resolved and dealt by making appropriate decisions by using metacognitive thinking skills.

It is well known that gifted students generally differ from the norm in respect to precocity and complexity (Alamer, 2014). Therefore, many researchers are of the opinion that, gifted students needs learning experience that tally with their talent which relevant to findings solutions to societal issues and social problems. Gifted students ought to be taught in a way that matches their intellectual level. Providing enabling environment for the gifted such as curricular that satisfy their talents alone would not allow them to maximize their talent without fully qualified teachers.

Gifted student require special educational set up entirely different regular educational services in traditional school settings (Al-Shehri, et al, 2011). Special educational programs is deem necessary for the gifted students to meet up with their needs and potentials for better problem solving (Jarwan, 2008). Several countries in recent times show interest in developing gifted students education because of its ample benefit in country's development, scientific and technological progress (Al-Zoubi., Rahman, & Sultan 2015).

Metacognitive thinking skills are the basic techniques used by the leaners to pereived and monitor the entire learning process. It is entirely different from learning it self because it beyond knowledge process. Cognitive skills are the basic talents for required for understanding and achieving learning or knowledge process, and are normally used in the accomplishing the learning activity processing. It is thus, subdivided into self-assessment and self-management, the former means refers to the ability of a person to measure his/her knowledge.

Metacognitive thinking skills and problem solving for social problem are going hand in hand especially in the domain of learning where students are faced with different problems on daily basis. According to Huitt (1992), solving problem is a systematic process in which the solution seeker perceives and resolves a gap between a current situation and a desired goal which normally hindered some unknown complexities. In general solving problem is a mental process that can be executed by a person seeking for an answer, thus it involved specific steps to reach to the target goal and it requires the use of specific strategies as well (Downing, Kwong, Chan, Lam, & Downing, 2009). In essences, this clarifies that process of problem solving, one or more possible solutions are chosen to solve the problem and the steps in both decision making and problem solving are almost similar. This study aims to investigate metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia.

1.2 Background of the Study

This study investigates metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia. Saudi Arabian government is highly keen and convinced that the gifted students in the country are encouraged (Mawhiba, 2007). The Saudi Authorities also believe that, if sufficient educational facilities are provided for the giftedness it will definitely lead to the identification of more gifted and talented students which is anticipated to bring more successful future to the country (Hassanan, 1997).

Presently, in Saudi Arabia gifted students are liable and have qualified for the provision at the highest level of educational services Alqefari, A. (2010). Right from 1999, the Saudi ministry of education has considerable show interest in developing special program for the gifted. King Abdul Aziz and his Companion's foundation for the gifted (KACFG) was the first and the biggest gifted support program established in 1999. The KACFG foundation provide financial support to the gifted centres across the kingdom. By the year 2000, the ministry created an independent unit for the gifted education in the kingdom, formally known as the General Administration for Gifted Students (MOE, 2007).

This administrative unit applies different methods to upgrade the gifted students programs, such as post school term, weekends, and summer holidays for providing gifted special activities (Alqefari, 2010). By the year 2001, gifted students centre was established at Najran KSA which provides services to elementary, middle school, and secondary school identified gifted students (Al-Shehri, et al, 2011). Some of the criteria set by the Ministry of Higher Education for nominating students to the gifted centre include high academic achievement, good conduct, special skills, and accumulative test scores (MOE, 2011). Thereafter, gifted students care centres were established and shouldered with responsibility of monitoring the educational, social and psychological affairs of the gifted students. Interestingly, today in Saudi Arabia gifted students' programs targeted both male and female gifted and talented students (Aljughaiman, & Grigorenko, 2013). By the year 2007, about 66,000 male and

female students were identified as gifted (Al Qarni, 2010). At the moment there are 31 care center for boys and 20 for girls (Ministry of Education Saudi Arabia, 2016).

Gifted Students in Saudi Arabia are not isolated from facing problems faced by other gifted students across the globe, yet there are still insufficient studies on the issues of gifted students in Saudi Arabia (Alamer, 2010; Al Garni, 2012). In a nutshell, the kingdom of Saudi Arabia is witnessing new yet alarming attention to gifted students educational programs, (Al-Shehri, et al, 2011), this include the establishment of gifted students centres.

Yet research investigating the role of metacognitive skills in solving social problem is still limited, especially among children of school age and little is known about gifted students (Aura et. al., 2011). Based on the available existing literature, prior studies on understanding and application of metacognition mostly focused on classroom system (Everson and amp; Tobias, 1998; schraw and amp; dennison, 1994; Sperling, Howard, Miller, murphy, 2002). Classification of problem solving within the methods of cognitive amendment includes the development of problem solving thinking skills by suitable developing to deal with the problems and find solutions in the field to face the general strategies. Therefore it describes the style of problem solving in the cognitive behaviour since developing the general methods in dealing with problems instead of focusing on the specific behaviours is preferred (Mauro, 2005).

The gifted students care centres established by Saudi Arabian government, which offer educational, psychology and social care to gifted students. The administration of this centre comprises the Centre Director, teachers, and assistants, behavioural specialists, academic and knowledge specialist, research laboratory attendants and general technicians. At the moment there are 31 care centre for boys and 20 for girls (Ministry of Education Saudi Arabia, 2016). The institutional framework for gifted education in Saudi Arabia is shown in Figure 1.1

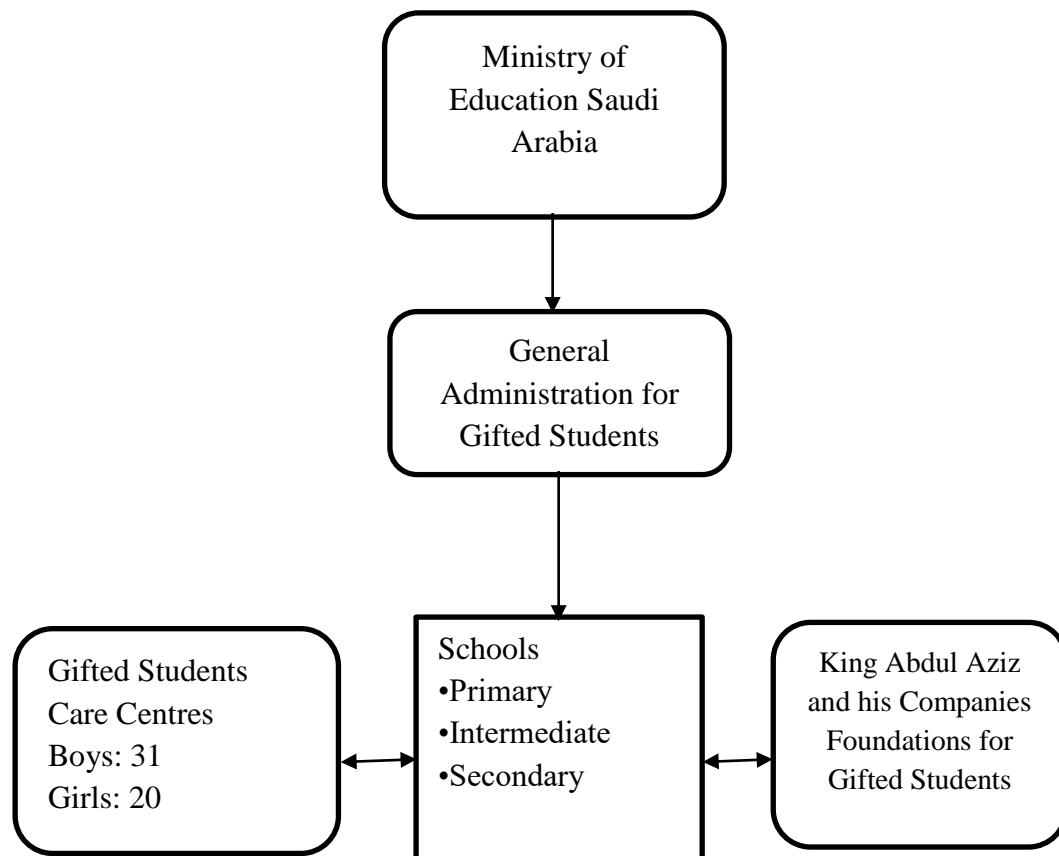


Figure 1.1 Institutional frameworks for gifted education in Saudi Arabia (Ministry of Education Saudi Arabia, 2016).

Despite the fact that several studies were conducted in relation gifted students issues in Saudi Arabia, but yet literature explaining the ability of gifted students on problem solving related to social problems using metacognitive thinking skills is lacking. However no study was conducted to investigate metacognitive thinking skills for solving social problem among gifted students in Saudi Arabia, thus the need for this study

1.3 Statement of the Problem

Solving social problem is one of the major issues affecting gifted students in Saudi Arabia. This along other challenges among the gifted students has been a concern to stakeholders and policy makers in the Saudi Arabian educational sector. In fact ample studies were done towards solving issues related to gifted students in Saudi Arabia, up till now a lot research needs to be done (Al-Nafea, Alkatay, and Aleslim (1992), ; Al Atari, (2000), ; Al- Thabaity, (2004), ; Al-Ghamdi, (2007), ; Al Qarni, (2010).

The core academic achievement of the Saudi gifted students have been an issue of concern to the educational ministry, policy makers, and stakeholders stakeholders and. Despite various measures put in place to improve the academic performance, yet the goal has not yet been realised as posited by Alamer (2014). On daily basis, the number of identified gifted students keep on increasing in the Saudi Arabian kingdom, and there is strong fear that the present foundations will not take

care of the increasing number of the gifted students (Bondagjy, 2000). Also a report by the ministry of education Saudi Arabia revealed that, the number of gifted student covered by the gifted centres is much less than the actual number of the gifted in the kingdom (SOME, 2007). In this case the ability of the gifted students to develop and utilize metacognitive thinking skills towards solving social problems is obviously deprived. Esteki & Moinmehr, 2012 stated that problem solving among gifted students becomes harder with high metacognitive state without appropriate cognitive abilities, and this cause students to face unpromising social problems such as isolation.

Naturally everyone at certain point in time may experiences some kind of social problems especially positive problem orientation, negative problem orientation, problem defining and formulation, general alternative solutions, decision making, solution implement and verification, impulsivity/careless and avoidance style because schooling life is full of uncertainty. Prior findings also vindicates clearly that, gifted students experienced social-oriented problems more often than non-gifted students (Lamont, 2012).

From the real social problem perspectives, gifted students face many obstacles since many families and the community at large hardly offer the necessary support for the gifted. Family in particular is considered as the main source of social problems face by the gifted. Ideally home is the place where the gifted students

establish personality, receive basic social education based on the societal values and norms (Al-Ghamdi, 2007). Therefore, one of the major obstacle of the gifted students in realising their dream is the difficulty solve social problems which usually emanates at the family level (Alqefari, 2010).

The gifted children's style of learning is quite different as they need especial academic, scientific support and input since they are characterized by actively metacognitive thinking skills and learning strategies. They are able to harmonize between the available requirements and appropriate strategies for understanding the knowledge and using it productively and effectively. Besides, they are positive and active in solving different types of problems according to the tasks which are done by them (Renzulli, 2005).

Problem solving comprises any effort in search of immediate solution or fulfilling an aim when an automatic solution is not readily available (Schunk, 2000). Problem solving is a task that relied on metacognition been the central thinking unit of human, an important element responsible for monitoring and regulating of cognitive processes (Gardner, 1991 and Karmiloffsmith, 1992). Problem solving related to social problems involved continues effort in finding solutions for because they occur in daily basis (Aura et. al., 2011). Most researchers with interest in problem solving field observed that problem related to social problems normally

occurred on day-to-day without an automatic answer or immediate answer at hand (Newell & Simon, 1972; Mayer, 1991).

Problem related to social are often termed as ill-structured, unlike classroom problems they are characterized as emergent as well with volatile answers that needs several assessment to serves as solution (Jonassen, 2000). The complexity of solving problem related to social problems warrants the application of metacognitive thinking skills in providing solutions because they cannot rely only on domain-specific knowledge, but rather on deep investigation of the problem and possibility of providing flexible solutions (Land, 2014) Although researchers have established that, problem solving related to social problems are complex in nature but several study concludes that metacognition is called for when proving solution (Hong, Jonassen, and McGee, 2003). According to Fisher (2007) posited that majority of students do not appropriately apply metacognitive skills in solving problems despite the great effort by the teachers on daily basis. In their findings, Allamnakhrah (2013) concluded that most of secondary school students in Saudi Arabia merely put their efforts to forcefully solve problems rather than using metacognitive thinking skills. These findings were very much comparable with several other studies that revealed the level of applying metacognitive thinking skills among students in solving class problems (Bataineh & Alazzi, 2009; Innabi & El Sheikh, 2007; Stapleton, 2011; Thurman, 2009). But none found to have assessed the application of metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia, hence the need for this study in

order to be filled the identified gap. In that regards, the study intends to investigate the level of metacognitive thinking skills among gifted students in Saudi Arabia; the level problems solving related to social problems among gifted students in Saudi Arabia; to determine the relationship between metacognitive thinking skills and solving problems related to social problems among gifted students in Saudi Arabia; to examine the influence of metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia; and finally to investigate the significance difference between male and female gifted students level of metacognitive thinking skills on problem solving related to social problems in Saudi Arabia.

1.4 Aim and Objective of the Study

The main aim of this study is to investigate metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia with a view to recommend possible means of boosting the metacognitive thinking skills of the gifted students and to deepen their ability in social problem solving. This is intended to be achieved through the following study objectives:

1.5 Research Objectives

1. To investigate the level of metacognitive thinking skills among gifted students in Saudi Arabia.

2. To investigate the level problems solving related to social problems among gifted students in Saudi Arabia.
3. To determine the relationship between metacognitive thinking skills and problems solving related to social problems among gifted students in Saudi Arabia.
4. To examine the influence of metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia.
5. To investigate the difference between male and female gifted students level of metacognitive thinking skills among gifted students in Saudi Arabia.
6. To investigate the difference between male and female gifted students level in problem solving related to social problems among gifted students in Saudi Arabia.
7. To investigate the difference between intermediate and secondary classes level of metacognitive thinking skills among gifted students in Saudi Arabia.
8. To investigate the difference between intermediate and secondary classes level in problem solving related to social problems among gifted students in Saudi Arabia.
9. To find out the suggestions that could be obtained to improve student's levels of metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia.

1.6 Research Questions

1. What is the level of metacognitive thinking skills among gifted students in Saudi Arabia?
2. What is the level of problems solving related to social problems among gifted students in Saudi Arabia?
3. Is there any significant relationship between metacognitive thinking skills and problem solving related to social problems among gifted students in Saudi Arabia?
4. Is there any influence of metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia?
5. Is there any difference between male and female gifted students level of metacognitive thinking skills among gifted students in Saudi Arabia?
6. Is there any difference between male and female gifted students level of problem solving related to social problems among gifted students in Saudi Arabia?
7. Is there any significance difference between intermediate and secondary classes level of metacognitive thinking skills among gifted students in Saudi Arabia?
8. Is there any significance difference between intermediate and secondary classes level of problem solving related to social problems among gifted students in Saudi Arabia?

9. What are the suggestions that could be obtained to improve student's levels of metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia?

1.7 Research Hypothesis

This study intended to test the following null hypothesis:

- Ho1. Gifted students in Saudi Arabia do not possess metacognitive thinking skills.
- Ho2. Gifted students in Saudi Arabia do not solve problems related to social problems.
- Ho3. There is no existing positive significant relationship between metacognitive thinking skills and problem solving related social problems among gifted students in Saudi Arabia.
- Ho4. Metacognitive thinking skills does not influence problem solving related to social problems among gifted students in Saudi Arabia.
- Ho5. There is no difference between male and female gifted students in level of metacognitive thinking skills in Saudi Arabia.
- Ho6. There is no difference between male and female gifted students in problem solving related to social problems in Saudi Arabia.
- Ho7. There is no significance difference between intermediate and secondary class's level in metacognitive thinking skills among gifted students in Saudi Arabia.
- Ho8. There is no significance difference between intermediate and secondary class's level in problem solving related to social problems among gifted students in Saudi Arabia.

1.8 Conceptual Framework of the Study

In order to establish a conceptual-based linked between then the independent variables components and the dependent variable component of the study, a conceptual framework was design as presented in this section. The study aims at investigating metacognitive thinking skills on problems solving related to social problems among gifted students in Saudi Arabia. Figure 1.2 below presents the conceptual framework showing the eight dimensions of metacognitive thinking skills (under the independent variable) namely; Declarative Knowledge, procedural knowledge, Conditional knowledge, Planning, information management strategies, comprehension monitoring, debugging strategy and evaluation. Whereas, the other component of the conceptual framework presents the dimensions for accessing problem solving related to social problems, these are; Positive problem orientation, Negative problem orientation, Problem defining and formulation, general alternative solution, decision making, Solution implement, verification, Impulsivity/careless, and avoidance style.

The Independent variable section (metacognitive thinking skills) and the dependent variable section (factors of solving social problem) were both conceptualized based on the concept theory of mind (TOM) presented by David Premack (1978).

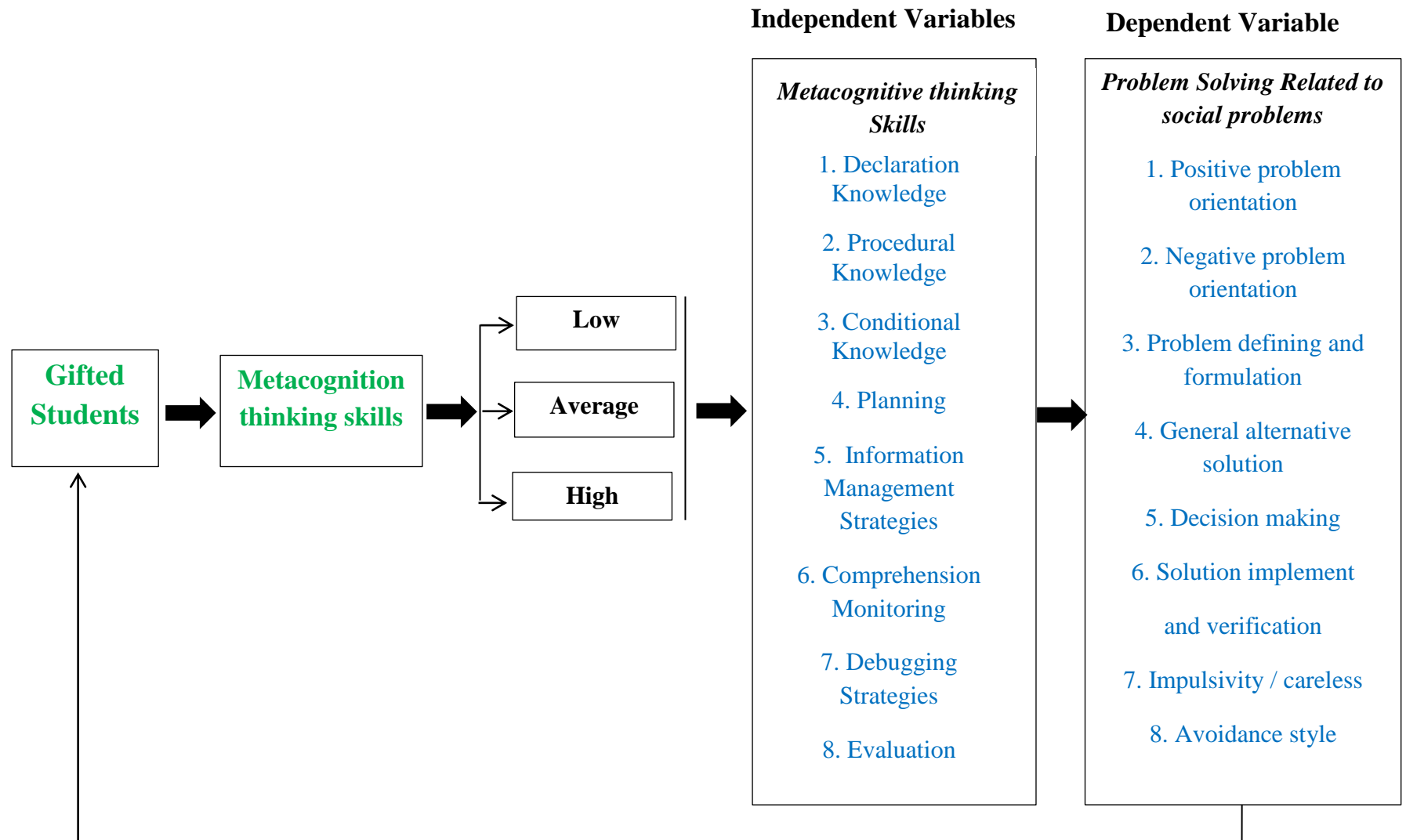


Figure 1.2 Conceptual Framework

1.9 Significance of the Study

The study is aimed at investigating metacognitive thinking skills on problem solving related to social problems among gifted students in Saudi Arabia. Level of metacognition among gifted students differs, therefore the study will find out those with low, average and high level of metacognition. Gifted students being talented children they ought to be given special care and attention in terms providing basic teaching aids, tools and facilities. Thus, this information is very vital to the authority concern, for it will serve as the basis for providing the priority needs of the gifted students and to appropriately restructure to existing gifted programs for the Saudi Arabian gifted students. It is obvious that, education for the gifted students in Saudi Arabia is not given the necessary attention by the authorities concern, issues such as those related to metacognition need to be identified and address (Davis & Rimm, 2004; and Porter, 2005). Moreover the study will explore the differences between metacognitive thinking skills among gifted males and females student in Saudi Arabia. This is also important to the public authority because schooling system in Saudi Arabia has a separate schools for Males and for Females students, so that emphasis will be given to the both the two segments in respective of their gender differences. Likewise, the current study will examined the relation between knowledge about cognition and regulation of cognition as metacognitive thinking skills on one side and solving problem related to social problems on the other side. This is important especially to teachers, whose duty is to understand how best a student can comprehend problems that not necessarily classroom in nature. In terms of contribution to the body of knowledge, the study is unique in the field of special

education especially as it intends to integrate the study variable with theory of mind. The study findings will shade more light to the understanding of the theory of mind in terms of applying metacognitive thinking skills among gifted students in solving problems related to social problems. In addition the study will add to the existing limited literature in metacognition research field particularly in Saudi Arabia where a wide gap is left unfilled by the previous studies on gifted students.

1.10 Limitations of the study

Here are a few limitations of the study. Firstly, as stated earlier that the current study will be conducted in Saudi Arabia, however, the province of Jeddah will be focused only and will not cover other provinces of the kingdom of Saudi Arabia. This is due to the reason that the province of Jeddah is famous for the schools of gifted students in the country.

Secondly, the population of the study consists of the gifted students at the age of 13-18 years (male and female) in the schools of gifted students in the province of Jeddah in Saudi Arabia. The sample for the study will be selected from the said population.

Thirdly, metacognitive thinking skills that play vital role in solving problems related to social problems will be considered in the current study. Finally, a questionnaire will be used for gathering data from the gifted students rather than using other data collection instruments since the quantitative data is required for the study.

1.11 Operational Definitions

Operational definitions of some of the major terms used in this study are as follows:

1.11.1 Gifted students

According to Rogers (2007), gifted students are those students who are recognized and detected as specialists and extraordinary students who have capabilities and high qualifications, and outstanding performance to accomplish academic tasks and able to achieve the excellence and superiority than others among the same age. They are also the students who need educational programs and services. With reference to the current study, gifted students are the students who have been classified by the Ministry of Education and they are categorized in Jeddah schools by the ministry. Their talents have been measured through the degree which the students have gotten it in the measurement test by the Ministry of Education Saudi Arabia.

1.11.2 Metacognitive thinking skills

Metacognitive thinking skills refer to the ability that monitors and controls students' and learners' knowledge and strategize processes of knowledge including many functions. These skills are considered the executive procedural skills which are used for controlling, preparing, and processing information based on sequence information whereas cognitive thinking strategies include awareness, emotional cognition, domination and conscious emotional control for person's learning (Janeck, Calamari, Riemann, & Heffelfinger, 2003). With regard to the current

study, metacognitive thinking skills are the skills that help gifted students to solve their problems.

1.11.2(a) Declarative knowledge

According to Bruning (1994), declarative knowledge is the information and real knowledge which an individual is acquainted with. In other words, declarative knowledge is known as the factual information stored in memory and is considered to be stagnant or static in nature. It is also known as propositional knowledge and/or descriptive knowledge. This is the part of factual information that describes how things are. It also addresses the relationship between events, things, processes and their attributes. As regards the current study, it relates to the gifted students' skills and limitations, strategies, potential self-mental and emotional abilities.

1.11.2(b) Procedural knowledge

Procedural knowledge is the ability of knowing how to respond or perform certain activities. This type of knowledge is making us cognizant and conscious about events and actions. Besides, it can sometimes be verbalized. It is a kind of knowledge about linguistic form and metalinguistic knowledge (Bruning, 1994). With reference to the current study, declarative knowledge refers to the gifted students' ability to employ learning metacognitive thinking or strategies such as how to answer a question or how to respond in certain situations.

1.11.2(c) Conditional knowledge

Kern-Isberner and Eichhorn (2014), stated that conditional knowledge means to know about why and when to use declarative and procedural knowledge. It assists students to assign their attributes and resources when to use a specific strategy for a specific task. In other words, it helps students how to respond and react effectively and strategically. In connection with the present study, conditional knowledge relates the gifted students' knowledge about how to use a particular strategy or reason and why does it prefer to use this strategy in a particular learning situation.

1.11.2(d) Planning

Metacognitive thinking includes three main skills such as planning, monitoring and assessing. According to Baker and Brown (1984), planning refers to the students' understanding and knowledge of the strategies that are used to accomplish the task and consciousness regarding how to use them in some certain circumstances. It includes planning the skills, specify the objectives, follow-up skills and knowledge of the sequence of errors and obstacles. It also includes setting goals and allocating resources prior to planning. As regards the current study, it refers to the gifted students' abilities to apply metacognitive thinking skills in connection with planning for achieving academic goals.

1.11.2(e) Information management strategies

Information management is one of the elements of organizational activity which involves gathering of information the information, keeping, and dissemination or making it available to those who needs it. In an organization, stakeholders been responsible for handling information they might the right to instigate, modify, disseminate or delete information defending on the policies of the organization (Dabbagh & Kitsantas, 2012).

1.11.2(f) Comprehension monitoring strategies

Comprehension monitoring refers to cognizant steps of sensing a problem by good readers. It helps readers to become focused and in control of their own reading comprehension (Boekaerts & Corno, 2005).

1.11.2(g) Debugging strategies

These are series of activities or process used in controlling cognitive actions and to ensure the aim of metacognition is achieved. Debugging strategies has several other benefits which include correcting conception and performance error, control and monitor learning, planning observing, and examining outcome of metacognition (Brown, 1987; Efklides, 2008).

1.11.2(h) Evaluation

Evaluation is a post learning activity which involved assessing the performance and effectiveness of learning strategies (McRae, Ochsner, Mauss, Gabrieli, and Gross, 2008). It has to do with the reader's ability to reflect back on the strategy adopted to ascertain whether it has work or not before taking a decision of trying some something else.

1.11.3 Problem solving

Landry, Smith, and Swank (2006), define problem solving skills as abilities to do something particularly to resolves academic problems and related issues. They also stated that the problem solving is a set of student behaviour when they faced an obstacle between him/her and achieving his/her objective or set of objectives to get. When the person can get his/her objective, the problem is resolved and it indicates the degree to which he/she made efforts to tackle the problem.

1.11.4 Social problems

Social problems refer to the issues that upset person's mood and emotional state in a society. In most cases social problem affecting students include, anxiety, depression, isolation among others (Neihart et al., 2002; Bakar & Ishak 2014).

1.11.4(a) Positive Problem Orientation

Literally positive problem orientation refers to the set of cognitive problem solving skills that comprise the common behaviour to (a) consider a problem as challenge (b) believe that every problem has a solution (c) accept the fact that everyone has personal ability to solve problems positively (d) be certain that for a problem to be solve effectively there is need for sufficient time and effort (e) oblige persons to

solve problems with effective communication instead of circumventing them (D'Zurilla et al., 2004).

1.11.4(b) Negative Problem Orientation

These are the set of cognitive emotional elements that comprises the general ability to (a) consider a problem as a great hazard to well-being (b) incapability of a person to tackle or solve problem efficiently (c) Naturally become worried and frustrated when confronted with problems (D'Zurilla, et al., 2004).

1.11.4(c) Problem Defining and Formulation

Problem definition and formulation describe the sequence of sorting and comprehending the nature of problem, which involve gathering refine facts about the problem. It also includes the proof of identification of demand, hurdles and setting the target goal of solving the problem (D'Zurilla & Goldfried, 1971; D'Zurilla & Nezu, 1999; D'Zurilla et al., 2002).

1.11.4(d) General Alternative Solutions

A general alternative solution this is the process of identify some possible potential solution to the problem-solving goals, which constitutes; conventional and original solutions for the superior and accommodating situation (D'Zurilla et al., 2002).