ATTITUDES OF FUTURE SPECIAL EDUCATION TEACHERS TOWARD GIFTED STUDENTS AND THEIR EDUCATION

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Future Teachers; Special Education; Gifted Education; Attitudes; Beliefs; Knowledge; Saudi Arabia; Theory of Reasoned Action; Culture; Theory of Knowledge; Teaching; Gifted Course; University.
Abstract

Saudi Arabian education is undergoing substantial reform in the context of a nation transitioning from a resource-rich economy to a knowledge economy. Gifted students are important human resources for such developing countries. However, there are some concerns emanating from the international literature that gifted students have been neglected in many schools due to teachers’ attitudes toward them. The literature shows that future teachers also hold similar negative attitudes, especially those in Special Education courses who, as practicing teachers, are often responsible for supporting the gifted education process. The purpose of this study was to explore whether these attitudes are held by future special education teachers in Saudi Arabia, and how the standard gifted education course, delivered as part of their program, impacts on their attitudes toward gifted students.

The study was strongly influenced by the Theory of Reasoned Action (Ajzen, 1980, 2012) and the Theory of Personal Knowledge (Polanyi, 1966), which both suggest that attitudes are related to people’s (i.e. teachers’) beliefs. A mixed methods design was used to collect quantitative and qualitative data from a cohort of students enrolled in a teacher education program at a Saudi Arabian university. The program was designed for students majoring in special education. The quantitative component of the study involved an investigation of a cohort of future special education teachers taking a semester-long course in gifted education. The data were primarily sourced from a standard questionnaire instrument modified in the Arabic language, and supplemented with questions that probed the future teachers’ attitudes toward gifted children. The participants, 90 special education future teachers, were enrolled in an introductory course about gifted education. The questionnaire contained 34 items from the "Opinions about the Gifted and Their Education” (Gagné, 1991) questionnaire, utilising a five-point Likert scale. The quantitative data were analysed through the use of descriptive statistics, Spearman correlation Coefficients, Paired Samples t-test, and Multiple Linear Regression. The qualitative component focussed on eight participants enrolled in the gifted education course. The primary source of the qualitative data was informed by individual semi-structured interviews with each of these participants.
The findings, based on both the quantitative and qualitative data, indicated that the majority of future special education teachers held, overall, slightly positive attitudes toward gifted students and their education. However, the participants were resistant to offering special services for the gifted within the regular classroom, even when a comparison was made on equity grounds with disabled students. While the participants held ambivalent attitudes toward ability grouping, their attitudes were positive toward grade acceleration. Further, the majority agreed that gifted students are likely to be rejected by their teachers. Despite such judgments, they considered the gifted to be a valuable resource for Saudi society.

Differences within the cohort were found when two variables emerged as potential predictors of attitude: age, experience, and participants’ hometown. The younger (under 25 years old) future special education teachers, with no internship or school practice experience, held more positive attitudes toward the gifted students, with respect to their general needs, than did the older participants with previous school experiences. Additionally, participants from a rural region were more resistant toward gifted education than future teachers from urban areas.

The findings also indicated that the attitudes of most of the participants were significantly improved, as a result of the course, toward ability grouping such as special classes and schools, but remained highly concerned about differentiation within regular classrooms with either elitism or time pressure.

From the findings, it can be confirmed that a lectured-based course can serve as a starting point from which to focus future teachers’ attention on the varied needs of the gifted, and as a conduit for learning about special services for the gifted. However, by itself, the course appears to have minimal influence on attitudes toward differentiation. As a consequence, there is merit in its redevelopment, and the incorporation of more practical opportunities for future teachers to experience the teaching of the gifted.
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## Glossary

<table>
<thead>
<tr>
<th>Term</th>
<th>Definition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Acceleration</td>
<td>Acceleration refers to Grade-skipping, which allows children to skip one or more grades (Davis &amp; Rimm, 2004).</td>
</tr>
<tr>
<td>Attitude</td>
<td>“Attitude is a Mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related” (Allport, 1935, p. 180).</td>
</tr>
<tr>
<td>Ability Grouping</td>
<td>Ability grouping refers to special classes and schools for the gifted (Preckel, Götz, &amp; Frenzel, 2010).</td>
</tr>
<tr>
<td>Belief</td>
<td>“Belief is a particularly provocative form of personal knowledge that is generally defined as pre- or in-service teachers’ implicit assumption about students, learning, classrooms, and the subject matter to be taught” (Kagan, 1992a, pp. 65-66).</td>
</tr>
<tr>
<td>Cultural knowledge</td>
<td>Cultural knowledge is the shared perceptions, values and beliefs of a society (Choo, 1998).</td>
</tr>
<tr>
<td>Differentiation</td>
<td>Differentiation refers to the strategy of providing learning experiences that are sufficiently challenging and relevant to the needs of all children within a heterogeneous ability classroom (Coleman, 2001).</td>
</tr>
<tr>
<td>Embedded Design</td>
<td>The Embedded Design mixes the different data sets at the design level, with one type of data embedded within the other set (Creswell &amp; Plano Clark, 2007).</td>
</tr>
<tr>
<td>Future Special Education Teachers</td>
<td>Those 3rd year university students who are undertaking a four year full-time Bachelor of Special Education degree. They include preservice teachers, and in-service teachers who held a diploma in education, but were upgrading their qualification to the bachelor’s degree in Special Education (King Saud University, 2012).</td>
</tr>
<tr>
<td>Gifted Students</td>
<td>“Those who have exceptional academic abilities and who need special and different education from that which is available in the regular classroom” (ALNafi, AlQatiee, AlDibaban, AlHazmi, &amp; AlSaleem, 1992, p. 25).</td>
</tr>
<tr>
<td>Implicit Knowledge</td>
<td>Implicit Knowledge is seen as belief in a set of three components: Explicit knowledge (information), experience, and cultural knowledge held by an individual (Polanyi, 1966).</td>
</tr>
</tbody>
</table>
Statement of Original Authorship

The work contained in this thesis has not been previously submitted to meet the requirements for an award at this or any other higher education institution. To the best of my knowledge and belief, the thesis contains no material previously published or written by another person except where due reference is made.

Signature: QUT Verified Signature

Ayidh Abdullah AlGarni

Date: 22/03/2013
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1 Introduction

1.1 PREAMBLE

It has long been known that students have different abilities and capacities for learning. Some struggle with learning and require substantial support to master basic content, while others possess exceptional capabilities that enable rapid and advanced learning outcomes. Those with exceptional abilities are variously described as gifted, highly able, or clever. In the Arabic world, they are often described as ‘smart people’. Equity issues suggest that, as a result of such differences in the students’ potential, schooling has a responsibility to address the needs of all children in ways that enable them to maximise their cognitive aptitudes, including the gifted students.

However, research shows that the needs of gifted students in Saudi Arabia and elsewhere are not being met as well as they could be by contemporary schooling (Al Qarni, 2010; Finley, 2008; Taylor & Milton, 2006; Winebrenner, 2000). One explanation, according to Paine (1990), is that teachers’ lack knowledge about, and experience with, giftedness, frequently find it difficult to address their students’ diverse needs. This explanation remains unchallenged in the literature. Of particular concern are the attitudes of preservice teachers who will one day influence the education of gifted students (Curtis, 2005). It is the contention of this thesis that knowledge and attitudes are linked.

1.2 CHAPTER OVERVIEW

The purpose of this study was to establish the attitudes Saudi special education future teachers hold toward gifted students and their education. Previous studies indicate that future teachers' negative attitudes correlate positively with their lack of knowledge of gifted students (Carman, 2011; Curtis, 2005; Kiley & Jensen, 1998; Morris, 1987). The term “future teachers” in the current study referred to those 3rd year university students who are undertaking a four year full-time Bachelor of Special Education degree. They include preservice teachers, and in-service teachers who held a diploma in education, but were upgrading their qualification to the bachelor’s degree in Special Education (King Saud University, 2012). The assumption being that, future special education teachers will have negative attitudes
toward special services for the gifted because of their possible lack of exposure to
giftedness. The study also examined the origins of these attitudes, and whether they
change as a result of a university course about giftedness. The assumption being that,
introducing future teachers to a course about giftedness will improve their attitudes,
positively, toward gifted special services. However, there is a cultural dimension that
needs consideration.

The values, needs, economic growth and interests of societies can differ and
change dynamically over time. Consequently, giftedness means different things to
different communities and cultures, and different attitudes therefore exist. The Saudi
Arabian culture is largely influenced by Islamic values, heritage and Bedouin
traditions. Its culture and society has witnessed changes over the past few years.
Currently, the extent to which future teachers’ beliefs align with the cultural
expectations, however, is still unknown. This study investigates the issue within the
Saudi context.

From previous research, demographic dimensions, such as age, hometown, and
contact with gifted children, were identified as potential predictors for effective
teachers of the gifted (Begin & Gagné, 1994a; Chipego, 2004; Curtis, 2005;
McCoach & Siegle, 2007). The conjecture is that these demographic backgrounds are
likely to account for a significant amount of variance in special education future
teachers’ attitudes toward the needs of the gifted students.

The rest of this chapter includes: the background to the study with a general
outline of the cultural and historical dynamics of the Saudi people (Section 1.3); the
significance of the research (Section 1.4); a preview of the theoretical framework of
the study (Section 1.5); and an overview of the structure of the thesis (Section 1.6).

1.3 BACKGROUND TO THE STUDY

The research was conducted in Saudi Arabia, where significant educational
reform is being undertaken to align the social and economic future with changing
global circumstances. Like many countries, Saudi Arabia is attempting to develop a
knowledge economy and, conditional for the success of this agenda is the
identification and support of the gifted. Teachers play an important role in the early
identification and support for the gifted (Diezmann & Watters, 2000) and, hence,
appropriate teacher education is seen as important in preparing teachers for this role.
In Saudi Arabia, gifted education in teacher education programs falls within the gambit of special education. Consequently, this study focused on future teachers who are undertaking Special Education program. Importantly, understanding the attitudes of future special education teachers towards gifted students, and how the term giftedness is construed, is acknowledged as arising from the cultural and historical dynamics of the Saudi people. The following sections discuss: the geography and establishment of Saudi Arabia (Section 1.3.1), education system in Saudi Arabia (Section 1.3.2), special education in Saudi Arabia (Section 1.3.3), higher education in Saudi Arabia (Section 1.3.4), teacher education in Saudi Arabia (Section 1.3.5), gifted education in Saudi Arabia (Section 1.3.6), and culture and gifted education in Saudi Arabia (Section 1.3.7).

1.3.1 Contemporary Saudi Arabia

The Kingdom of Saudi Arabia was founded in 1932 by King ABD AL-AZIZ bin Abd al-Rahman AL SAUD. It is now, geographically, one of largest nations in the region, with a total population of 25.6 million people (Ministry of Higher Education, 2012). It occupies about four-fifths of the Arabian Peninsula covering approximately 2,250,000 square kilometres. Saudi Arabia lies at the heart of the old world, namely, Europe, Asia, and Africa. It is bounded in the west by the Red Sea and the Gulf of Aqaba, in the east by the Arabian Gulf, Qatar, the United Arab Emirates, the Sultanate of Oman, and Bahrain, in the north by Jordan, Iraq, and Kuwait; and in the south by Yemen. Saudi Arabia is the homeland not only for Arabs, but also for Islam. All Saudi citizens are Muslims, in a unified nation with a high degree of cultural homogeneity. The most distinguishing cultural characteristics of Saudi citizens are their strong family ties, tribal relationships, and faithfulness to Islam (submission to the will of God) (Alsalloom, 1995). The official language of the country is Arabic, however English is spoken but mainly in a medical context (Aljabber, 2004).

Until oil was discovered in the 1950s, Saudi Arabia was without natural resources, and the life and the economy was simple. People lived without any kind of technologies, adopting a traditional Bedouin lifestyle with little focus on education (Aljabber, 2004). Within a few years, after the discovery and exploitation of its oil reserves, the quality of life improved rapidly.
A massive improvement took place in a variety of fields, such as health, education and transportation. A strong resource-based economy allowed the Saudi government to provide its citizens with free health services as well as free education. The Saudi government realised the importance of education and paid it great attention. For example, in 2009 education accounted for the highest level of the government budget. A total annual expenditure of AUD 32.6 billion (SR122.1 billion), which was more than a quarter of the entire budget of 2009, was invested in education and manpower development. The aim was strengthening the Saudi’s academic and human resources (Kingdom of Saudi Arabia Ministry of Finance, 2009). The highest salaries are also paid to those employed in education, medicine, and the military, compared to other professional positions.

1.3.2 Education System in Saudi Arabia

Saudi Arabia has a centralised education system, where the Ministry of Education has supreme authority and limited autonomy is given to the schools. For religious and cultural reasons, all levels of education are segregated by gender. In addition, from its foundation in 1952 to 2002, the Ministry of Education was responsible only for the education of boys, while the General Presidency of Girls was responsible for the education of the girls, with a number of differences between the curricula (Ministry of Education, 2004). However, in 2002, Crown Prince Abdullah Bin Abdul-Aziz integrated the Presidency of Girl’s education with the Ministry of Education. From that time the Ministry of Education provided the same curricula, teaching methods and instruction, and assessment processes for both boys and girls.

General education in Saudi Arabia is divided into four levels: kindergarten, primary, intermediate, and secondary (Ministry of Education, 2004). Children aged 3–5 years go to Kindergarten. However, attendance of Kindergartens is not a prerequisite for enrolment of first grade of Primary education and Kindergartens are not part of the official education ladder. The commencement age at the Primary level is six years. Primary education consists of six years of learning and provides the children with basic knowledge and skills in mathematics, arts, science, religion, health, and social science. Intermediate education consists of three grades, while Secondary education also takes three years. Students finish high school usually by the age of nineteen. Before being able to receive the high school certificate, all students sit the national General Secondary Test (GST). If they pass, they then can
attend universities or other higher education institutions. Some gifted students, who achieved well in the test, may have the chance to study abroad. However, many of the strategies that are commonly available to gifted students in western countries, such as special classes and schools, as well as the early entry to schools and universities, are not available in Saudi Arabia (Al Qarni, 2010).

1.3.3 Special Education in Saudi Arabia

Special Education Teachers are responsible to teach primary, intermediate, and secondary school students with disability and giftedness, and promote students' social, emotional, intellectual and physical development. Their roles also include: discovering those students, and work with other regular classroom teachers to provide assistance to each student with special needs. They are also responsible for the learning plan designed for each student with special needs including the gifted (Department of Special Education in Saudi Arabia, 2012).

The Bachelor of Special Education in Saudi Arabia is a four-year, full-time program offered in the Faculty of Education. This specialised program prepares special education teachers for careers in special education (special schools and classes), as well as facilitating inclusion in regular schools. The program is comprised of the following university general requirement: 33 hours in general education, 51 hours in general special education, 15 hours in disabilities and 3 hours in giftedness, in addition to 14 hours in two minor areas (e.g., hearing impairment and autism). School placement is required for students in their last semester (12 hours) (Ministry of Higher Education, 2012). Participants in the course are generally pre-service teachers studying for their basic teacher education qualification or existing in-service teachers wishing to specialise in special education.

1.3.4 Higher Education in Saudi Arabia

As part of its educational strategy, the Saudi government is enhancing intellectual capital by providing access to quality higher education. Indeed, the country has undergone a constant process of reform and development in the higher education sector in recent years, a response to social and economic developments. International developments in technology have contributed most to the reforms. In 2007 alone, Saudi Arabia spent more than $15 billion on higher educational development (Kingdom of Saudi Arabia Ministry of Finance, 2009). This massive
spending funded, in the main, existing universities and facilitated the opening of new universities, to provide access for more Saudi students.

To reflect on the government’s efforts to develop human resources, one can look at the King Abdullah University of Science and Technology (KAUST), which was built to better manage the expanding social and economic demands. Opened in 2009, on 36 million square metres of land on the Red Sea, KAUST is an international university. It aims to employ the best professors and student researchers from around the world. Its main goal is to promote science achievements and research capability. KAUST offers a range of technology and science programs, including nanotechnology, micro-technology, water conservation, biotechnology and IT (information technology) (King Abdullah University of Science and Technology, 2009). With this goal, KAUST has signed collaborative agreements with more than seven foreign academic institutions.

Strong commitment to education is also seen in the total (943,275 students: 429,796 male and 513,479 female) enrolments in higher education in 2010/2011 (Ministry of Higher Education, 2012). Thus, education is an important focus of the economy and, as the country develops, will gain greater value, with increased demand for high-ability students to undertake careers that will help the country prosper. To be achieved, this outcome will require highly-skilled and trained teachers, who are able to identify gifted students and provide the essential educational experiences that will encourage and equip them for higher education.

The government is currently working on an ambitious 25-year strategy to develop the higher education system so that it can meet the challenges of a sustainable academic development process and the needs of the labour market for highly skilled graduates, as well as the development of a knowledge economy (Ministry of Higher Education, 2012). One such challenge is the preparation of future teachers, particularly teachers who will be responsible for gifted education. This task is not easy or straightforward, especially as gifted education has received very little attention in the development of teacher education, despite the existence of a gifted education policy and the government's effort to develop the country’s intellectual capital. The reasons for resistance of Saudi Arabian educational faculties to gifted education are unknown, but such research is beyond the scope of the current study. The purpose of this study is to investigate the attitudes of future special
education teachers in Saudi Arabia toward gifted education, and to examine how participating in a gifted education course impacts on these attitudes.

1.3.5 Teacher Education in Saudi Arabia

The Ministry of Higher Education administers more than 24 universities and post-secondary institutions. Since 1953, preparing teachers has been a priority for officials from the Ministry of Education. There is an Education Faculty in each university, with the male and female students studying on separate campuses. No faculty provides a gifted education course for their general education future teachers (Ministry of Higher Education, 2012). However, four universities, with special education departments, provide their future special education teachers with a compulsory introductory course that addresses gifted education. Of concern is the finding, in the US, that future special education teachers with lack of knowledge of giftedness tend to have negative attitudes to the gifted (McCoach & Siegle, 2007). It is expected that similar attitudes also exist in Saudi Arabia. This issue is discussed later (Section 2.6) in relation to how and why future teachers may have these attitudes. The next section explores the contextual features surrounding the education of gifted students in Saudi Arabia.

1.3.6 Gifted Education in Saudi Arabia

There is currently no international perspective or agreement on the definition of gifted students, nor is there consensus on the identification procedures of gifted students (Manning, 2006; McClain & Pfeiffer, 2012). For this reason, educators have a range of personal beliefs about the term “giftedness” in schools because of its multiple meanings. In addition, the values, needs, and interests of society also differ and change dynamically over time (Diezmann, 2002; Sternberg & Davidson, 1986). As a result, each society defines the term “giftedness” according to its values and culture.

The term “giftedness” has been defined in Saudi Arabia as being “evident in someone who has exceptional academic abilities and who needs special and different education from that which is available in the regular classroom” (ALNafi et al., 1992, p. 25). Exceptional academic abilities are demonstrated, in the context of Saudi system, by consistently high grades, that is, those who regularly perform above 90% on tests in their school subjects. These students are then nominated by their teachers
and provided with further testing to determine whether they are gifted (Alfahaid, 2002). Such tests comprise the Group IQ test (Terman, 1926) for special abilities, the Torrance test for creativity (Torrance, 1980), and the WISC-R test for intelligence (Wechsler, 1974). Being *academically* gifted is the most valued aspect of giftedness in the Saudi Arabian system; hence, the current study focused on attitudes toward academically gifted students. Further, a gifted child, for the purpose of this study, is a student who has exceptional academic capabilities in one or more of the school’s academic subjects.

In the Saudi Educational Policy Document, the Ministry of Education (2004) emphasises that gifted learners should be provided with special programs and special attention in mainstream classrooms. The Ministry also encourages teachers to identify both male and female gifted students. However, it fails to provide any comprehensive gifted program for the schools (Al Kaldy, 2001; Al Qarni, 2010; Maajeeny, 1990). While there is such a worldwide emphasis on gifted education, the responsibility for such education falls to the teachers to provide an adequate program for their gifted students. However, without adequate information or knowledge about giftedness, teachers appear to rely on their prior beliefs and myths about giftedness, which may negatively influence their attitudes toward these students (Hyatt, 2000). For this reason, the current study assessed the attitudes of future Saudi teachers, namely; special future teachers.

The first investigation of gifted identification procedures in Saudi Arabia was conducted by AlNafi et al. (1992). Their study provided the scientific foundation for establishing the first two gifted organisations, namely; (1) the National Program for the Identification and Education of the Gifted, which was established in 1998 by the Ministry of Education; and (2) the King Abdulaziz and His Companions Foundation for Gifted (KAHCFG), which was established in 1999. The KAHCFG foundation is chaired by King Abdullah, with a Board of Directors, comprised of princes, ministers, businessmen, and specialists in gifted education. The mission of this foundation is to help schools identify gifted children and assist them in their education. However, in terms of school practices, gifted programs have only recently begun and have not received sufficient attention from the Saudi schools (Al Qarni, 2010). The early beginnings of gifted programs have been weak and sporadic in only a few regions, and are, in the main, linked to enthusiastic workers dedicated to these
programs. According to Al Qarni (2010), the gifted programs have been neglected in most Saudi schools, despite the adoption of an official giftedness educational policy.

The exact reasons for such resistance toward gifted programs are still unknown; however, teachers’ attitudes toward gifted education appears to play a significant role in providing and facilitating gifted programs (Bain, Bliss, Choate, & Brown, 2007; Buldu, 2005; Buttery, 1978; Carrington & Bailey, 2000; Curtis, 2005; Moon, Bangel, & Capobianco, 2010; Berman, Schultz, & Weber, 2012; Sumreungwong, 2003; Taylor, 2001; Tomlinson, Tomchin, & Callahan, 1994). The attitudes of future teachers also have been shown to have a crucial impact on gifted students’ future education (Curtis, 2005). Hence, appropriate teacher education is seen as important in preparing teachers for this role. In Saudi Arabia, gifted education in teacher education programs falls within the field of special education. Consequently, the study focused on future teachers engaged in the special education program.

Teachers are still the only authority identifying gifted students (Al Qarni, 2010). Therefore, teachers must be well prepared, at their undergraduate levels, about giftedness. Without such knowledge they may not be able to identify the gifted students in their classes (Alfahaid, 2002). In addition to their important role in the nomination process, teachers are critical in providing and facilitating challenging tasks for the gifted (Diezmann & Watters, 2000), particularly since many Saudi gifted students continue to be taught in regular classrooms (Al Qarni, 2010). However, a lack of knowledge and understanding of differentiating instruction (Tomlinson et al., 1994) means that the needs of the gifted children are overlooked in most of regular classrooms (Al Qarni, 2010; Hyatt, 2000). Paine (1990) argued that this outcome may result from insufficient knowledge about giftedness and classroom skills to meet their learning needs.

1.3.7 Culture and Gifted Education in Saudi Arabia

The Saudi society plays a vital role in the public’s attitudes, and hence the decisions, about supporting special programs for gifted students (Alfahaid, 2002). Future teachers, as members of the society, are influenced by such public attitudes. However, the teachers’ attitudes and beliefs make important contributions to developing public attitudes through their influence on the students (Tomlinson et al.,
Thus, in order to enhance the attitude of society toward special services for gifted students, it is critical that a positive attitude be fostered among future teachers, who, in turn, will influence the future provision of gifted education for students when they commence teaching.

The Saudi’s culture is largely influenced by Islam. All educational policy and school systems aim at maintaining the essential tenets of Islam (AL-Muslat, 1994). Furthermore, Islam acknowledges that human beings are different in their capabilities. In the Holy Qur’an, several verses acknowledge the differing levels of intellectual capability amongst people. For instance: “It is He who hath made you the inheritors of earth: He hath raised you in ranks some above others, that He may try you in the intelligence He hath given you” (Holy Qur’an, Al-Anam, 165).

In another verse, Allah affirms the differences in people’s abilities (mentally, physically, and in their knowledge): “Are those equal, those who know and those who do not know? It is those who are endued with understanding that receive admonition” (Holy Qur’an, Az-Zumar, 9).

The Islamic religion values education. It also values the differences of human giftedness. However, not being highly gifted does not mean that people are not required to fulfil their own potential. The Prophet Mohammad (peace be upon him) encourages everyone to seek knowledge from childhood until death. He stated that, “The seeking of knowledge is a duty incumbent on every Muslim man and woman” (Wafi, 1967, p. 66). This importance of learning in the Islamic culture is also stressed in the Holy Qur’an. Through the Angel Jibrael, Allah revealed the very first word to the Prophet Mohammed. It was "Iqra," which means "Read." So, the acquiring of world and religious knowledge is highly important in Islam. Since all Muslims are required by Allah to be intelligent contributors to society, reading, learning, and acquiring knowledge becomes the duty of all Muslims. This importance placed on learning goes hand-in-hand with the Islamic conceptions of justice and equality; thus, education should be equally accessible to male and female, rich and poor, and young
and old. Moreover, it should be available to the gifted as well as to the less able. The Islamic principle of social justice is attained when every individual in society has the chance to fulfill their own potential.

According to Islamic principles, Allah has provided people with all the required faculties and senses to live and develop the earth: “Say it is He Who has created you, and endowed you with hearing (ears), seeing (eyes), and hearts. Little thanks it is ye give” (Holy Qur’an, Al-Mulk, 23).

So, every individual in Islamic society is required to fulfill his or her potential. In Saudi Arabia, providing a conducive environment for learning and guiding students’ growth, according to their abilities, is the responsibility of special education teachers. Giftedness is perceived as a gift from God that needs to be developed and maintained. According to Abunayyan (1994), in Islam, giftedness is influenced by both genetics and environmental factors. However, giftedness cannot be fostered in a hostile or unsupportive environment or with a lack of knowledge about giftedness by teachers. As a result, both positive and negative attitudes of future Saudi special education teachers, toward gifted education, must be identified by researchers.

1.4 SIGNIFICANCE OF THE RESEARCH

There has been little available research examining future teacher attitudes toward gifted students and their education, or if their teacher preparation programs are adequate in providing the fundamental knowledge necessary for meeting the special needs of the gifted. The research described in “The Experience of Learning” (Al-Silami, 2010) sees an understanding of future teachers’ attitudes as a necessary prerequisite to devising effective teaching. The current study examined future teachers’ attitudes in regard to gifted students and their education and whether a university course about giftedness has an impact on their attitudes.

The study is motivated by the view that the obstacle to gifted education stems, generally, from the negative attitudes, held by some Saudi educators, towards special services for gifted students (Alfahaid, 2002). It also sought to establish if the international concern, that future teachers had negative attitudes toward gifted students, especially those in Special Education program (McCoach & Siegle, 2007),
were true in the Saudi context. Hence, the current study explored the attitudes of future special education teachers toward gifted students and their education in Saudi Arabian context.

In addition, prior research had identified that demographic dimensions, such as age, hometown, and contact with gifted children, were also potential predictors for effective teachers of the gifted. Begin and Gagné (1994a) emphasised the benefit of identifying which characteristics were the best indicators of effective teachers of the gifted. Hence, the current study has benefits for the gifted, as well as for decision-makers to more easily determine those with negative attitudes toward the gifted.

The study will advance the gifted education field in the following ways. First, it will reveal Saudi Arabian special education future teachers’ attitudes toward giftedness. Second, it will also provide the Saudi Ministry of Education and the Ministry of Higher Education new evidence about contemporary special education future teachers’ attitudes toward gifted education. Third, it identifies the benefits and difficulties, and the impact on their attitudes toward gifted students, of future teachers undertaking a course related to giftedness, at the undergraduate level.

1.5 RESEARCH QUESTIONS

The main purpose of this research was to investigate the attitudes of future special education teachers in Saudi Arabia toward gifted students and their education, and to examine how participating in a course about giftedness impacted on these attitudes.

Three research questions were posed:

1. What are the attitudes of Saudi Arabian future special education teachers toward gifted students and their education?

2. What factors predict the attitudes of future special education teachers toward gifted education (i.e., age, the participants’ hometown, level of their parents’ education; and contact with giftedness), and

3. To what extent does participating in the gifted course impact on the attitudes of future special education teachers regarding special services for the gifted?
1.6 OVERVIEW OF THE THESIS

The previous sections described the study’s context, setting, and participants’ education. The context involved a brief geopolitical overview of Saudi Arabia, as well as the status of teacher education in Saudi Arabia and worldwide. Additionally, gifted education in Saudi Arabia was discussed, along with a synopsis of how the Islamic culture may provide the conceptual basis for people’s beliefs about the gifted.

Chapter 2 reviews the literature that helped the development of the conceptual framework that informs this research and identifies the key theoretical perspectives on the nature of attitudes. The principles that underpin the education of gifted students were also examined in Chapter 2. Chapter 3 provides a description of the methodology of the study, including the research design and research methods used. Chapter 4 reports on the results and findings, while Chapter 5 is the discussion chapter. The final chapter, Chapter 6, presents the research conclusions and the recommendations for practices and further research.
2 Literature Review

2.1 INTRODUCTION

The main purpose of this research is the investigation of the attitudes of future special education teachers in Saudi Arabia toward gifted education, and the examination of how participating in the gifted course impacts on these attitudes. The chapter provides a review of the literature that helped the development of the conceptual framework that informs the study. The chapter addresses: the key theoretical perspectives on the nature of attitudes (Section 2.2); definitions and characteristics of gifted students (Section 2.3); the principles underpinning the education of gifted students (Section 2.4); special programs offered for the gifted students (Section 2.5); attitudes toward gifted students and gifted education (Section 2.6); universities and the provision of courses on gifted education (Section 2.7); predictors of attitudes toward the gifted (Section 2.8); the theoretical framework of the study (Section 2.9); and concludes with a summary of the chapter (Section 2.10).

2.2 ATTITUDES AND RELATED CONCEPTS

This section explores the literature pertaining to the notions of attitudes and a number of related concepts, such as beliefs. Research into the concept of attitudes and its relationship to behaviour was popular during the 1930s (Baron, Branscombe, & Byrne, 2008). The historical context to the conceptualisation of the construct of attitude, used in this study, has drawn upon these early years of research. When defining the term “attitude”, a distinction must be made between it and other related concepts, for example, beliefs (Ajzen, 2012). Thus, there must be a clear conceptualisation of the construct for attitude. The challenge of defining the construct of attitude and the importance of studying attitudes were highlighted in the early work of Greenwald, Pratkanis and Breekler (1989). They posited that research into attitudes had been driven by the assumption that attitudes predict behaviour. To add further complexity to this field, there was confusion between the term attitude and the concept of beliefs (Koballa, 1988; Taylor, 2009). Hence, a clear definition of both terms (attitudes and beliefs), and a discussion of the relationships between both terms is presented below.
The following sections address the construct of attitudes (Section 2.2.1), the relationship between attitudes and beliefs (Section 2.2.2), the measurement of attitudes (Section 2.2.3), and the relationship between attitudes and behaviours (Section 2.2.4), concluding with a summary (Section 2.2.5).

2.2.1 Attitudes

The theoretical construct of attitudes was introduced to the field of social psychology, in the early twentieth century, by Thomas and Znaniecki (1918) in their treatise “The Polish Peasant in Europe and America”. According to Thomas and Znaniecki, attitudes are not innate but stem from a process of acculturation. Since then, attitudes have been investigated by many researchers (e.g., Allport, 1935; Begin & Gagné, 1994a; Buttery, 1978; Cramond & Martin, 1987; Donerlson, 2008; Jacobs, 1972; Maio & Haddock, 2010; Megay-Nespoli, 1998; Sumreungwong, 2003). Allport (1935) defined attitudes as “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related” (p. 180). His definition is still the most often used within attitudinal research (e.g., Bordens & Horowitz, 2002; Donerlson, 2008; Maio & Haddock, 2010; Pratkanis, Breckler, & Greenwald, 1989). Further, Allport (1968) distinguished an attitude from related concepts such as belief by arguing that attitude is a “state of readiness for mental and physical activity” (p. 160). Allport’s definition has been adopted for the purpose of the current study.

Hovland and Rosenberg (1966) investigated attitude and its components. Their hierarchical model of attitudes saw cognition, affect and conation as components underlying attitude. However, Ajzen (1989) extended the concept by proposing that attitudes are “not merely related to beliefs, they are actually a function of beliefs” (p. 247). By this he means that beliefs about some attribute of an object contribute to one’s attitude to that object.

Within the field of education and the nature of teacher attitudes, Stern and Keislar (1975) identified six features of teachers’ attitudes. First, their construct of attitudes includes an evaluative component that is always based on their beliefs about their students. Second, their attitudes are always directed toward an object, such as a situation, person, idea, and the like, or in this case gifted students and their education. Third, their attitudes include a predisposition to perform or respond to situations in their
classrooms in particular ways. Fourth, teachers’ attitudes expressed more validly when there is a choice of behaviours. Fifth, they are acquired from cultural knowledge and through their experience as students or teachers. This feature was also supported by the theory of knowledge (Polanyi, 1966), the theory of reasoned action (Ajzen, 2012), and noted by Allport (1935) in his early definition of attitudes. Sixth, teachers’ attitudes influence their behaviour in the classroom (Ajzen, 2002; Gagné, 1991). Within the literature there is support for these features on teachers’ attitudes (Ajzen & Fishbein, 1977; Allport, 1935; Koballa, 1988; Pratkanis et al., 1989; Taylor, 2009). According to Ajzen (2012), in order to enhance teachers’ attitudes, it is important to understand the relationship between attitudes and beliefs.

2.2.2 The Relationship between Attitudes and Beliefs

The relationship between beliefs and attitudes is argued to be “inextricably interwoven” (Plunkett, 2000, p. 41). Beliefs can be defined as the cognitive background of attitudes (Ajzen, 2012; Maio & Haddock, 2010; Polanyi, 1966). A belief (also referred to as implicit knowledge) is something that one assumes to be factual. In their Theory of Reasoned Action (TRA), Fishbein and Ajzen (1975), distinguish between attitudes and beliefs. Thus, “whereas attitude refers to a person’s favourable or unfavourable evaluation of the object, beliefs represent the information he has about the object, specifically, a belief links an object to some attribute” (Ajzen, 2012, p. 12). The distinction between beliefs and attitudes can be illustrated further by a comparison of the following two statements: the belief statement “alcohol is unhealthy”, and the attitude statement “alcohol should be banned”.

A belief is defined as “any simple, proposition conscious or unconscious, inferred from what a person says or does, capable of being preceded by the phrase ‘I believe that…” (Rokeach, 1968, p. 113). Kagan (1992a) described teachers’ beliefs as implicit knowledge that teachers, for example, future teachers (in the current context), might hold about their students, subject matter, and their roles and responsibilities. As a consequence, “teacher belief is a particularly provocative form of personal knowledge that is generally defined as pre- or in-service teachers’ implicit assumption about students, learning, classrooms, and the subject matter to be taught” (Kagan, 1992a, pp. 65-66). This definition of beliefs was adopted for the current research.
According to the Theory of Personal Knowledge, a belief is based on three components: cultural knowledge, explicit knowledge, and experience (Polanyi, 1966). It argues that beliefs provide information for attitudes by linking objects, phenomena or experience, and their attributes or defining characteristics.

To conclude, the term “belief”, as illustrated above, is often described as “implicit knowledge” that is held by an individual or, in this context, future teachers about gifted students and their education. Based on the previous discussion, future teachers’ attitudes toward gifted students and their education are formed by previous belief which includes (information, cultural knowledge and experience). These three components of beliefs are discussed shortly (Section 2.9).

2.2.3 Measurement of Attitudes

To measure a person’s attitude, attitude scales are the most commonly used in research (Myers, 2008), as they tend to be less complicated to design, conduct, and analyse (Stern & Keislar, 1975). Moreover, Stern and Keislar (1975) argues that attitude scales, which consist of positive and negative statements about targeted objects, can be used to accurately reflect an individual’s attitude. This mixing of positive and negative statements has its own specific advantages. For example, it can be used to “alert inattentive respondents that item content varies” (Swain, Weathers, & Niedrich, 2008, p. 116). Another, and perhaps more significant advantage, is to diminish the effect of respondents choosing the same scale for all statements (Weisberg, 2005, p. 84), especially when mixing positive and negative statements (Ray, 1990). The result is a less extreme score across the statements. Furthermore, mixing positive and negative questionnaire statements makes respondents more aware of the fact that the content of the different statements varies (Drolet & Morrison, 2001; Swain et al., 2008). For this reason, the current study used a questionnaire which includes both positive and negative statements: “Opinions about the Gifted and their Education”(Gagné, 1991).

Over the last century, a variety of attitudinal scales have been developed, including Thurston’s Equal-Appearing Interval Scale (Thurstone & Chave, 1929a), Likert’s Summative Rating Scale (Likert, 1932), Guttman’s Cumulative Scale (Guttman, 1944), and Osgood’s Semantic Differential Scale (Osgood, Suci, & Tannenbaum, 1957). Likert’s Summative Rating Scale is the most widely used rating scale in most attitudinal studies (Ten Klooster, Visser, & de Jong, 2008). This scale has
a set of favourable and unfavourable attitude statements that are rated on a 5-point scale. It ranges from “strongly agree”, “agree”, “no opinion”, “disagree”, to “strongly disagree”. Gagné and Nadeau’s (1991) attitudinal questionnaire, which is utilised in the current study, is based on Likert’s 5-point Summative Rating Scale. Gagné and Nadeau’s (1991) questionnaire has been successfully utilised in numerous studies (e.g., Begin & Gagné, 1994a; Childers, 2010; Chipogo, 2004; McCoach & Siegle, 2007; Tirri, Tallent-Runnels, Adams, Yuen, & Lau, 2002). Their attitudinal questionnaire is used here to measure special education future teachers’ attitudes toward gifted students and their education. Further information about this questionnaire is provided later (Section 3.3.1).

The next section highlights a number of relationships between attitudes and behaviour (Section 2.2.4).

2.2.4 Relationship between Attitudes and Behaviour

Over the last 50 years, the link between attitude and behaviour has been investigated by a number of social psychologists (Ajzen, 1980, 2005, 2012; Ajzen, Czasch, & Flood, 2009; Ajzen & Fishbein, 2005; Campbell, 1963; Hovland & Rosenberg, 1966). In order to understand such relationships between attitudes and behaviours, Fishbein and Ajzen (1981, 2012) developed their Theory of Reasoned Action (TRA).

The widely used Theory of Reasoned Action was introduced to Social Psychology between 1975 and 1980, and still provides a theoretical framework for contemporary studies of behaviour (Ajzen, 2012; Nor, Shanab, & Pearson, 2008). The TRA was proposed to explain the relationship between beliefs and attitudes on one hand, and attitudes and behaviour on the other. As suggested by Ajzen (1980), “attitude could explain human actions” (p. 13). The TRA proposes that behaviour is determined by an individual’s intention and subjective norms to perform a particular behaviour. This intention, in turn, is a function of a person’s attitude toward the behaviour. Ajzen, Czasch, and Flood (2009) argue that the best predictor of behaviour is intention, which is the cognitive representation of an individual’s readiness to perform a defined behaviour. Intention can be best determined by investigating a person’s attitude toward a particular behaviour. In addition, attitudes are a function of beliefs. Thus, according to the TRA, teachers’ future behaviours toward gifted students in classrooms can be
predicted by exploring their existing attitudes toward gifted students and their education.

2.2.5 Summary

This section defined attitude as “a mental and neural state of readiness, organized through experience, exerting a directive or dynamic influence upon the individual’s response to all objects and situations with which it is related” (Allport, 1935, p. 810). It identified the key theoretical perspectives on the nature of attitudes and beliefs, showing that beliefs inform attitudes. Furthermore, attitudes are not something people are born with, instead they are related to one’s beliefs, and are based upon explicit knowledge, experiences and cultural knowledge (Koballa, 1988; Polanyi, 1966). According to the TRA, attitudes can guide behaviour when they are specific and related to a particular situation. The current study is strongly influenced by the theoretical position of Fishbein and Ajzen (1981), and by the Personal Knowledge Theory (Polanyi, 1966) in exploring the relationships between beliefs and attitudes.

2.3 THE CONSTRUCT OF GIFTEDNESS

Given that attitudes are influenced by knowledge, it is important to synthesise and define the complex field of giftedness. The following sections address definitions of giftedness and culture (Section 2.3.1), variation in definitions of giftedness (Section 2.3.2), implicit and explicit conceptions of giftedness (Section 2.3.3), and characteristics of gifted students (Section 2.3.4).

2.3.1 Definition of Giftedness and Cultures

Defining “giftedness” has been a challenge for educators and scholars alike (Gagné, 2004b; Manning, 2006). For example, educators tend to have a range of personal beliefs about the construct “giftedness” as applied to students in schools, because of its multiple meanings. Further, societal values, needs, and interests also differ and change dynamically over time (Diezmann, 2002; Sternberg & Davidson, 1986). As such, Sternberg and Davidson (1986) have identified that “giftedness is something that we invent, not something we discover. It is what one society or another wants it to be, and hence its conceptualisation can change over time and place” (pp. 3-4). As a result, each society defines the term giftedness according to its cultural values.
Therefore, future teachers from different countries have their own notions of what may constitute “giftedness” (Maajeeny, 1990).

Views of giftedness also change over time. Decades ago, Lewis Terman’s definition of giftedness, which equated giftedness with high IQ, held sway among educators (Kristen & Frances, 2000). Recently, however, the definitions of giftedness “have become more multidimensional and include the interplay of culture and values on the development of talents and gifts” (Reis & Renzulli, 2009, p. 1). Hence, to define the term giftedness, it is necessary to understand the home cultural knowledge of the gifted child. In Central Africa, for instance, the term giftedness is referred to as the qualities of cooperation, obedience, respectfulness and willingness (Sternberg & Ruzgis, 1994). The Korean's cultural knowledge of giftedness comprises self-confidence, creativity, the need for achievement, task commitment, intellectual ability, learning styles, social relationships, and ethics, as well as art/physical skill and personality (Soo-Kyong, Kyung-Hee, & Ho-Seong, 2005). Further, Okagaki and Sternberg (1993) found that Asian Americans tend to emphasise cognitive competence in their beliefs of giftedness, whereas Latino Americans tend to emphasise socioemotional competence. Thus, cultural differences occur, in relation to giftedness.

These differences are also illustrated by the impact of cultural and religious perspectives of giftedness within Saudi Arabia. For example, certain characteristics of giftedness, such as musical gifts and dancing ability, have been excluded in the Saudi Arabia study because such activities are forbidden by the culture. Here, the term “giftedness” is defined as being “evident in someone who has exceptional academic abilities and who needs special and different education from that which is available in the regular classroom” (ALNafi et al., 1992, p. 25). As a result, the future teacher participants in this study are likely to hold the belief that gifted students are those who have exceptional academic abilities.

2.3.2 Variation in Definitions of Giftedness

There is no universally agreed upon definition of giftedness, with educators often influenced by the range of diverse meanings. In fact, there may be more than one definition within a country. In the US, for example, the term giftedness has different definitions according to particular states. These definitions, although using similar language, vary in the specificities. In Idaho, the term giftedness has been defined as “a
student who has high capabilities in intellectual, creative, specific academic or leadership aspects, or aptitude in the performing or visual arts, and needs services or activities that are not being provided in the mainstream schools” (Idaho State Department of Education, 2001). In Indiana, gifted students are defined as “students who perform or demonstrate a high degree of accomplishment in one or more domains when compared to their peers” (Indiana Department of Education, 2002).

In Australia, each state also has its own definition. For instance, in Queensland, gifted students are specifically defined as “students who excel, or are capable of excelling, in one or more areas such as general intelligence, specific academic studies, visual and performing arts, physical ability, creative thinking, interpersonal and intrapersonal skills” (Queensland Department of Education and the Arts, 2004). The term includes varied and differing characteristics, with an emphasis on the importance of developing a process for identifying gifted students that suits each school context. In New South Wales state schools gifted students are those whose potential is distinctly above average in one or more of the following domains of human ability: intellectual, creative, social and physical (New South Wales Department of School Education, 2004). In Victoria, while there is no specific definition of giftedness, it has recognised inclusive definitions of giftedness, emphasising the gifted students’ learning environment and the need to help gifted students to achieve their potential (Victoria Department of Education Employment and Training, 2012).

Although there is no accepted consensus on the definition of giftedness in western countries, the definitions highlight that giftedness is more than just high IQ. Such definitions incorporate cognitive and non-cognitive components, in multiple forms. It is also understood that gifted children have high abilities in one or more intellectual competencies and skills.

In Saudi Arabia, on the other hand, there is only one general definition for all regions. The term “giftedness” is defined as “evident in someone who has exceptional academic abilities and who needs special and different education from that which is available in the regular classroom” (ALNafi et al., 1992, p. 25). The nation’s schools use this general definition.

In summary, the varied definitions for giftedness (see Section 2.3) highlight the scope and conceptualisation that exists in different countries which may be influenced by different cultures. In order to understand these differences and the structure people
use for labelling others as gifted, it is important to discuss implicit and explicit conceptions of giftedness.

2.3.3 Implicit vs Explicit Conceptions of Giftedness

Implicit and explicit conceptions of giftedness are useful in exploring the nature of giftedness (Zhang & Sternberg, 1998). They also inform future teachers’ beliefs about gifted students and their education. Implicit conceptions (Section 2.3.3.1), and explicit conceptions (Section 2.3.3.2) of giftedness are addressed below.

2.3.3.1 Implicit Conceptions of Giftedness

Implicit conceptions of giftedness have been defined as “intellectual constructions residing in the minds of individuals, and are discovered by questions and inference and often revealed by behaviour” (Zhang & Hui, 2003, p. 78). In order to examine people’s implicit conceptions of giftedness, researchers in education tend to question teachers, laypersons, or future teachers about their attitudes and beliefs of giftedness (Furnham, 2001; Sternberg, 1985b; Zhang & Hui, 2003). Hence, understanding such conceptions of giftedness is essential because, for example, it determines the identification procedures of giftedness and determines how most educators evaluate their own and others’ giftedness. Moreover, teachers’ attitudes and behaviour toward, and their decision making about, their gifted students are influenced by their implicit conceptions of giftedness (Solow, 2001).

To account for similarities across cultures, Stenberg and Zhang (1995) proposed “The Pentagonal Implicit Theory of Giftedness”. It includes five criteria that may comprise the term giftedness. The first criterion is excellence, which indicates superiority in one or more areas. Rarity, the second criterion, points to an excellence that is relative to peers. The third criterion, demonstrability, is achieved through one or more valid tests. The fourth criterion is the productivity of the gifted. The last criterion is the value to society of giftedness. However, as noted earlier, implicit conceptions about the term giftedness, which form teachers’ attitudes toward a gifted child, vary from one culture to another (Nisbett, 2003).

A comparison of implicit conceptions of giftedness across the U.S., Hong Kong, and mainland China revealed both similarities and differences among these three cultures (Sternberg & Zhang, 1995; Zhang & Hui, 2003; Zhang & Sternberg, 1998). Three studies examined the utility of the Pentagonal Implicit Theory of Giftedness. The
first study comprised a group of 24 students at Yale University and a group of 39 parents of gifted children in Connecticut (Sternberg & Zhang, 1995). A second study included a group of 72 in-service and preservice teachers from the University of Hong Kong (Zhang & Sternberg, 1998). The third study examined the beliefs of second year students (74 males and 115 females) at China Central Teachers’ University (Zhang & Hui, 2003). The result indicated that the first two groups of participants used the five specified criteria when they identified individuals as gifted. However, the Hong Kong participants took productivity into account more for boys than for girls (Zhang & Sternberg, 1998). For the Chinese participants, the results revealed that they, in making judgment about giftedness, take into consideration three criteria of the pentagonal theory: excellence, productivity, and value (Zhang & Hui, 2003). These similarities and differences between cultures may suggest that the structure people instinctively use for labelling others as gifted is different from culture to another and may affect the way they make policies about, identification of, curricula for, and instruction of gifted students. Contrasting with implicit conceptions of giftedness are explicit conceptions. A discussion of explicit conceptions ensues.

2.3.3.2 Explicit Conceptions of Giftedness

Explicit conceptions of giftedness are different from implicit conceptions. Sternberg (1985b), for example, defined explicit conception as “constructions of psychologists or other scientists that are based on or at least tested on data collected from people performing tasks presumed to measure psychological functioning” (p. 14). Psychologists and scientists have investigated giftedness in order to test hypotheses, such as Gardner’s (2004) Theory of Multiple Intelligence, Sternberg’s (1985a) Triarchic theory, Gagné’s (2009) Differentiated Model of Giftedness and Talent (DMGT 2.0), Stanley’s (1976) Acceleration Model, and Renzulli’s (1977) Enrichment Model.

However, the earliest explicit conception of giftedness was investigated in 1925 by Terman (Kristen & Frances, 2000). He defined gifted students as those students who score in the top one per cent in general intelligence, on a Binet test (Clark, 2002). Recently, this procedure has been critiqued as being too limited (Gardner, 2004; Little, 2005). Hence, broader more pluralistic conceptions of giftedness have emerged (Gagné, 2004a; Gardner, 1995; Marland, 1971; Sternberg, 1985a; Tannenbaum, 1983). They range from general, broad characterisations (e.g., intellectual potential) to more targeted
conceptions of specific actions, products, or abilities within domains (e.g., attention control and memory efficiency) (Sternberg & Davidson, 2005).

As a result of investigation into explicit conceptions of giftedness, three important models had emerged. They each feature the value of environment, including teachers, in the development of the gifted child. The models are: the Three-Ring Model (Renzulli, 1977), the Theory of Multiple Intelligences (Gardner, 1983, 2004), and the Developmental Model of Giftedness and Talent (DMGT) (Gagné, 1985; Gagné, Balchin, Hymer, & Matthews, 2009). These three models are part of the gifted education course in the current study. By being educated about the similarities and differences between these models, future special education teachers expand their knowledge to include a multidimensional construct of giftedness, which may influence their attitudes positively toward the gifted. These models, explored in the future Saudi teachers’ gifted course, are discussed below.

Renzulli’s (1979) Three-Ring Model is described as an interaction among three components: above average abilities, task commitment, and creativity. He argues that productivity is not always determined by scoring in the top five per cent on tests of general ability. However, Renzulli does not completely reject tests of general intellectual ability for determining above-average ability. He pointed out that gifted children are those possessing or capable of developing these three components and applying them to any potentially valuable area of human performance. His "three-ring" conception of giftedness (above average but not necessarily superior ability, creativity, and task commitment), were embedded in a Houndstooth background that represents the interactions between personality and environment (see Figure 2.1 below).
Gardner (1983, 1999, 2004) was one of the earliest theorists to propose a research-based multifaceted belief of giftedness in his Theory of Multiple Intelligences. He proposed eight possible domains of giftedness: linguistic, logical-mathematics, musical, spatial, bodily-kinaesthetic, interpersonal, intrapersonal, and naturalist intelligence. Gardner argued that the traditional view of giftedness, based only on an IQ test, was too limited. His “theory of multiple intelligences” is widely used and excites the attention of many educators’ attention (Gardner, 2004). This theory has challenged long-held beliefs about giftedness, especially the view that a one-dimensional model of intelligence is a single measure of giftedness. While there are serious criticisms of the empirical base of his theory (Waterhouse, 2006), the theory has been adopted by many teachers to help them understand gifted students, especially those who do not excel on formal domain-based tests or traditional intelligence tests. It is the aim of the course under study in the current research to introduce future teachers to these domains in order to help them overcome possible misconceptions of giftedness. However, Musical intelligence will not be relevant due to the Saudi culture.

Gagné’s (2004c) work takes a different direction to Gardner’s model. It places an emphasis on talent development. He criticised the traditional test-based definition of the top five per cent of the population, and instead argued that some 10 per cent of students could benefit from a differentiated program for the gifted. Gagné (2004c) defined giftedness as “the possession and use of untrained and spontaneously expressed natural
abilities (called aptitudes or gifts), in at least one ability domain, to a degree that places a child at least among the top 10% of his or her age peers” (p. 120). Gagné (1985) had earlier proposed a developmental theory that distinguished giftedness from talent; namely the Differentiated Model of Giftedness and Talent (DMGT) theory. The theory explains how exceptional natural abilities (gifts) develop into specific high level skills (talents). The DMGT proposes six natural ability domains: intellectual, creative, social, perceptual, muscular, and motor control. The model proposed that the six components can interact to foster the process of moving from having natural abilities (gifts) to systematically developed skills (talents) (see Figure 2.2 below). This model is aligned with the Saudi culture and beliefs where giftedness is seen as a gift from God that needs to be developed and maintained.
Figure 2.2. Differentiated Model of Giftedness and Talent (DMGT) (Gagné et al., 2009)
Gagné’s (2004c) model emphasised the importance of the environment (including teachers) and personality factors on the gifted population. Unlike Renzulli, Gagné also perceive creativity as one area of giftedness, but not a necessary component of it. Nevertheless, Gagné and Renzulli share the same view that they see much larger proportions of the population as gifted. Gagné (2004a) claimed that a differentiated program should be provided to those who belong to (approximately) the top 10 to 15 per cent of the relevant reference group, in terms of natural ability (for giftedness) or achievement (for talent). In Renzulli’s (2002a) model, this proportion is between 15 to 20 per cent of performance in any given domain or human endeavour. This view of large proportions of gifted population with their diverse characteristics may challenge teachers’ beliefs and attitudes that they will rarely encounter any gifted children in their classes. Therefore, to gain a better understanding of the future teachers’ beliefs of giftedness, it is necessary to understand the characteristics of gifted students.

2.3.4 Characteristics of Gifted Students

Researchers have described many characteristics purported to be evidence of giftedness. For instance, gifted students may have advanced comprehension, great curiosity, a thirst for knowledge, heightened sensitivity toward others, the capacity for understanding an extraordinary quantity of information, persistence, an early insight into social issues, musical gifts, dancing abilities and enhanced academic abilities (Catron & Wingenbach, 1986; Clark, 2002; Davis & Rimm, 2004; Gagné, 2004c; Gardner, 2004; Tannenbaum, 1997). By understanding such specific characteristics of gifted students, teachers and administrators can provide the appropriate definitions and identification procedures for their schools (Manning, 2006; Sumreungwong, 2003), as well as impact on their attitudes toward the gifted child.

Gifted students are different in their cognitive abilities, motivation, personalities, self-sufficiency/independence, conscientiousness, emotional control, perseverance and learning styles (Clark, 2002; Gagné, 2004c; Grigorenko & Sternberg, 1997; Renzulli, 2002b; Winebrenner, 2000). Hence, future teachers need adequate knowledge about the gifteds’ diverse characteristics, so they can nurture their individualities. Furthermore, understanding their characteristics will help in
terms of providing gifted students with an appropriate education that will meet the specific needs of these students (Davis & Rimm, 2004).

The range of characteristics exhibited by gifted children is extensive (see the summary in Table 2.1). According to Winebrenner (2000), gifted students are different from other students, in their learning, in five ways. First, they learn new concepts quickly. Second, they remember previous experiences which can make reviewing what they have been studied boring for them. Third, they perceive concepts and ideas at more complex and abstract levels than their classmates. Fourth, they become frustrated by being made to shift from interesting topics, as they see it, to other learning tasks, before they have learned the whole topic. Finally, they have heightened powers of concentration.

Knowing such characteristics can impact on future teachers beliefs and attitudes toward meeting the individual needs of gifted students (Sumreungwong, 2003). Further, these characteristics need to be understood by future teachers so that they can to provide their gifted students with an appropriate education. The gifted course addressed in the current study introduces future teachers to gifted characteristics.
Table 2.1

*Characteristics Commonly Found in Gifted Students*

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>Description</th>
<th>References</th>
</tr>
</thead>
<tbody>
<tr>
<td>General intellectual ability</td>
<td>High level of verbal ability.</td>
<td>(Clark, 2002; Davis &amp; Rimm, 2004; Gagné, 2004c; Renzulli, 2002c; Sternberg &amp; Davidson, 2005; Tannenbaum, 1983)</td>
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<tr>
<td></td>
<td>Advanced in language and thought.</td>
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<tr>
<td></td>
<td>Have a higher mental age, compared to their peers.</td>
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<tr>
<td></td>
<td>Advanced cognitive ability.</td>
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<td></td>
<td>More trustworthy and honest.</td>
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<td></td>
<td>Understand older people’s conversation</td>
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<td>Logical thinking</td>
<td>Thinking processes are quick and logical, compared with average children.</td>
<td>(Gagné, 2004c; Guilford, 1965)</td>
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<td></td>
<td>Natural curiosity and an urge to learn.</td>
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<td></td>
<td>Convergent problem solving.</td>
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<td></td>
<td>Persistence.</td>
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<td></td>
<td>Flexible thought processes.</td>
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<tr>
<td>Academic abilities</td>
<td>Have a long attention span for activities that are related to their interests.</td>
<td>(Davis &amp; Rimm, 2004; Tannenbaum, 1983)</td>
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<td></td>
<td>Work and study independently.</td>
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<td></td>
<td>Questioning ability.</td>
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<td></td>
<td>Read at earlier age comparing to their ages child.</td>
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<td></td>
<td>Self-motivated learning style.</td>
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<td></td>
<td>Fast processing in learning.</td>
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<td></td>
<td>They get easily bored with routine tasks.</td>
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<tr>
<td>Arts</td>
<td>Different from peers in their instinctive art skills.</td>
<td>(Clark &amp; Zimmerman, 1984; Gagné, 2004c; Renzulli, 2002c; Zimmerman &amp; National Association for Gifted Children (U.S.), 2004)</td>
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<td></td>
<td>Have superior visual memories.</td>
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<td></td>
<td>Have high motivation to develop their artistic ability.</td>
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<tr>
<td>Leadership ability</td>
<td>Like to be leader in organizing games and resolving arguments.</td>
<td>(Davis &amp; Rimm, 2004; Parker &amp; Begnaud, 2004)</td>
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<td></td>
<td>High self-confidence, risk taking, wisdom, devotion, charismatic, intuitive, and evaluative.</td>
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<td>Emotional abilities</td>
<td>Sensitive to the feelings of others.</td>
<td>(Clark, 2002; Csikszentmihalyi, Rathunde, Whalen, &amp; Wong, 1996; Gagné, 2004c)</td>
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<td></td>
<td>Express concern about world problems.</td>
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<td></td>
<td>Have a sense of fairness and justice.</td>
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<td></td>
<td>Interest in social issues.</td>
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<td></td>
<td>Social capability (handling relationships).</td>
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<tr>
<td></td>
<td>Different in their emotional than others in terms of depth and intensity.</td>
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<td></td>
<td>Empathy (recognizing emotions in others).</td>
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<tr>
<td>Musical abilities</td>
<td>Interest in music sounds as early as 1 or 2 years old.</td>
<td>(Clark &amp; Zimmerman, 1984; Gagné, 2004c; Renzulli, 2002c)</td>
</tr>
<tr>
<td></td>
<td>Sensitive to music structure.</td>
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<tr>
<td></td>
<td>Pick up songs quickly, and memorise tunes, rhythms or sounds easily.</td>
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2.4 GIFTED STUDENTS AND EDUCATION

Although substantial research has been concerned with identifying the characteristics of gifted students, other research has focused on pedagogical practices in the education of gifted children (e.g., Abunayyan, 1994; Reis & Renzulli, 2009; Renzulli, Smith, & Reis, 1982; Silverman & Baska, 1993; VanTassel-Baska et al., 2009). Since all students have differing abilities and potential, they need to undertake learning that matches their abilities (Knight & Becker, 2000).

Previous research shows that the majority of gifted students throughout the world spend most of their time in regular school classrooms (Hyatt, 2000; Maajeeny, 1990). In the US, the National Association for Gifted Children (2011) published its annual report for 2010-2011 “State of the Nation in Gifted Education”. Their data shows that gifted students spend the majority of their time in the regular education classroom being taught by teachers who are not trained to meet their needs. In Saudi Arabia, the majority, if not all, of gifted students also spend most of their time in mainstream classrooms (Al Qarni, 2010; Maajeeny, 1990). The difficulty with this situation is that gifted students easily and quickly complete mainstream tasks and problems (Winebrenner, 2009), frequently become bored (Cohn, 2003) and frustrated (Delisle & Galbraith, 2002). Subsequently, they may lose interest and ultimately underachieve. Gardner (2004) suggested that to overcome these two risk factors for academic achievement, the gifted need to be provided with differentiated instruction that can match their unique abilities.

The knowledge base of future teachers appears to be limited about gifted education, which may negatively influence their attitudes toward these students (Morrissey, 2006; Paine, 1990). According to Paine (1990) future teachers believe in the existing divergent needs among students. However, from baseline data collection of the National Centre for Research on Teacher Education, Paine concluded that lack of explicit knowledge and inexperience in these differences made it difficult for the teachers to cater for their students’ diverse needs.

Considerable research also has focussed on the provision of special support for the gifted in western countries. Students with disabilities have had substantial educational support and investment in the development of specialised resources (Winebrenner, 2000). However, gifted students, over the same period, have been neglected due to two misguided beliefs.
First, the assessment scores of gifted students are high, which led to the misguided belief that they can learn effectively in a mainstream classroom, and do not need any differentiated curriculum. That is, gifted students are *autodidactic*. However, research has revealed that gifted students cannot develop their potential on their own (Fiedler, Lange, & Winebrenner, 2002; Winebrenner, 2000, 2009). They need qualified teachers who can identify their potential, and help them develop it. In addition, many students, who are gifted, have not been identified as so by their teachers (Malik & Balda, 2006; Winebrenner, 2000). As a result of not being identified and provided with special education, there is a fear that they may lose their self-esteem, become discouraged, and eventually drop out early from school (Knight & Becker, 2000). According to Watters and Diezmann (2003), “gifted students can be disadvantaged by a failure to cater for their special learning needs” (p. 46). Feldhusen (1989) also refuted the belief that gifted students can succeed without special programs, concluding that:

…grouping of gifted and talented students in **special classes with a differentiated curriculum**, or as a cluster group in a regular heterogeneous classroom (but again with differentiated curriculum and instruction), **leads to higher academic achievement** and better academic attitudes for the gifted and leads to no decline in achievement or attitudes for the children who remain in the regular heterogeneous classroom. Gifted and talented youth need accelerated, challenging instruction in core subject areas that parallel their special talents or aptitudes. They need opportunities to work-with other gifted and talented youth. And they need…**teachers who both understand the nature and needs of gifted youth and are deeply knowledgeable in the content they teach** (emphasis added). (p. 10)

Second, popular yet misguided belief held by teachers, and one which may explain their resistance to gifted special services, is that keeping gifted students in regular classrooms can assist slower students to gain a better understanding of the material (Fiedler et al., 2002). Schunk’s (1987) research on role modelling shows that the learning abilities of gifted students are too advanced from those low achieving students. Not only that, low achieving and regular students seem to flourish when gifted students have been removed from their classrooms (Gentry, 1999). For example, gifted students may not be able to facilitate the learning for students who are struggling with their learning. Slower learners can benefit more
from more able students who are not deemed gifted, but are performing well at the appropriate grade level (Winebrenner, 2000).

According to Begin and Gagné (1994b), teachers who hold the belief that gifted students should stay in mainstream classrooms, in order to help low achieving students, tend to have negative attitudes toward gifted students and their education. Yet, they influence the outcomes of gifted students (Brulles, Saunders, & Cohn, 2010; Jacobs & Harvey, 2010). This outcome has immense ramifications as teachers are the nearest professionals who can directly influence gifted students and their achievements (Forum, 1980).

Although, in some countries, identification strategies have been successful at identifying gifted students, these students remain unchallenged in the regular classrooms (Chipego, 2004). This result is argued to relate to teachers attitudes toward gifted students and their education (Brulles et al., 2010; Jacobs & Harvey, 2010). So, understanding future teachers’ attitudes is essential to changing the status quo because attitudes “are thought to serve as predictors of behaviours” (Bai & Ertmer, 2008, p. 95).

2.5 SPECIAL PROGRAMMING FOR GIFTED STUDENTS

The needs of gifted students can be met through a variety of programs (Davis & Rimm, 2004), with teachers being responsible for providing and facilitating these programs (Sheehan, 2011). However, if the teachers lack information about such strategies, their attitudes and practices may influence whether or not they are provided (Hansen & Feldhusen, 1994; Moon et al., 2010). Paine (1990) identified that future teachers often believe in existing differences among students; however, because of their lack of information and inexperience, they frequently find it difficult to address their students’ diverse needs. The following sections discuss strategies that are advocated for the education of gifted students and are included in the preparation course of future teachers in the current study; Acceleration (Section 2.5.1), Differentiation (Section 2.5.2), and Ability Grouping (Section 2.5.3). It concludes with a summary (Section 2.5.4).

2.5.1 Acceleration

Davis and Rimm (2004) defined acceleration as “moving faster through academic content, which typically includes offering standard curriculum to students
at a younger-than-usual age” (p. 120). The main aim of acceleration is to accommodate gifted students’ ability and to meet their learning needs (Colangelo & Davis, 2003). Further, Davis and Rimm (2004) described two models of acceleration. The first model is *service delivery*, which allows for early entrance to kindergarten or to university, full acceleration or grade skipping, and part-time grade acceleration. The second type is *subject acceleration* or acceleration as a curriculum model (e.g., VanTassel-Baska et al., 2009). This second model allows gifted students to study more material and subjects in less time than expected in a regular classroom. The acceleration curriculum model can be applied in mainstream classrooms and special gifted classes. Through acceleration, gifted students can complete the work of two or more years in one year, which is called a *telescoping program* (Colangelo & Davis, 2003).

Grade-skipping, which allows children to skip one or more grades (Davis & Rimm, 2004), is the only acceleration strategy accredited by the Saudi educational system (Batterjee, 2010), and is the most popular form of acceleration in the US (Rogers, 2002a). Thus, the participants in the current study have an understanding of the practice of acceleration as skipping a grade. According to Gross and Brody (2004b), grade-skipping helps gifted children overcome boredom and impatience in being in lower level classes. Rigorous meta-analyses, undertaken by Steenbergen-Hu and Moon (2011), have confirmed the positive influence of acceleration on high-ability learners, in terms of academic achievement and social emotional development.

Thus, acceleration, of any type, can benefit gifted students academically, socially and emotional (Hoogeveen, Hell, & Verhoeven, 2005; Neihart, 2007). For example, a comprehensive review of acceleration by Neihart (2007) found robust evidence that academic acceleration benefits gifted students academically, as well as through the development of positive self-esteem (Lupowski, Whitmore, & Ramsay, 1992; Rogers, 1992), advanced social maturity and social leadership (Gross, 2004a; Noble, Robinson, & Gunderson, 1993; Rogers, 1992), and higher educational aspirations (Lubinski, 2004; Olszewski-Kubilius & Grant, 1996). Furthermore, acceleration appears to require less educational funds than other types of special programming for the gifted (Hoogeveen et al., 2005) and has the added benefits of
enhancing their motivation and confidence (Steenbergen-Hu & Moon, 2011; VanTassel-Baska, 1986).

Despite these benefits, some educators remain sceptical of, and often resist, acceleration as an option for gifted students (Hoogeveen et al., 2005). Anecdotal evidence suggests that there are widespread concerns with acceleration of gifted students related to beliefs about the maturity of the gifted students. Teachers, in the US, believe that grade-skipping may cause social problems or maladjustment among the gifted (Costley, 1982; Hoogeveen, Hell, & Verhoeven, 2009). This belief may be due to teachers’ lack of information about the need of gifted students for acceleration (Gilman, 2008; Hoogeveen et al., 2005). In the Netherlands, for example, Hoogeveen et al. (2005) investigated the attitudes of 334 secondary school teachers, in seven schools, toward acceleration (grade skipping) after receiving specific training on giftedness and acceleration. The participants’ attitudes were identified before and after the intervention, which included seven pages of information about acceleration and giftedness (including a literature review, references, and addresses of relevant institutions). The teachers also attended an information meeting, at their school, given by a staff member of the Centre for the Study of Giftedness. The control group included teachers from nine schools where no information meeting took place. The results showed that teachers who attended the sessions held more positive attitudes toward the social competence, school achievement and motivation of accelerated students. Furthermore, after the information sessions, the teachers’ attitudes towards emotional problems of accelerated students were less negative than before (Hoogeveen et al., 2005). Hence, attending an information meeting about acceleration seems to improve attitudes toward it. Thus, familiarity with acceleration appears essential in improving teachers’ attitudes. While some of the participants of the current study might be familiar with the practice of acceleration, the extent to which this influences their attitudes had not been previously identified. Therefore, the current study examined this issue in the context of Saudi Arabia.

### 2.5.2 Differentiated Curriculum

There is general belief among theorists and researchers in gifted education on the need to differentiate the regular curriculum for gifted students (Finley, 2008; Gagné, 2005; Tomlinson et al., 1994). In this context, differentiation refers to the strategy of providing learning experiences that are sufficiently challenging and
relevant to the needs of all children within a heterogeneous ability classroom. However, according to Diezmann and Watters (2000), beside the importance of the challenging tasks for gifted students, the role of the teacher is critical in providing and facilitating these tasks.

Differentiation enables teachers to implement several strategies in an inclusive classroom, a significant approach towards meeting the needs of the gifted students (Coleman, 2001). However, many gifted students continue to be taught in regular classrooms (Knight & Becker, 2000), by teachers with incomplete views of differentiating instruction (Tomlinson et al., 1994). For this reason, Hyatt (2000) posited that the needs of gifted children have been neglected in most of these regular classrooms. As suggested by Paine (1990), this may be due to the fact that most future teachers have insufficient training and skills about giftedness. Thus, providing future teachers with strategies for differentiating the curriculum should provide future gifted students with more challenging tasks (Hudson, Hudson, Lewis, & Watters, 2010). As noted by Finley (2008), “for teachers to be effective in differentiating curriculum and instruction for gifted learners, they must be knowledgeable and informed about this population of students and instructional practices that promote differentiation (p. 80). differentiation can be facilitated by Cluster grouping is an important technique that facilitates differentiation for gifted students (Renzulli, Gentry, & Reis, 2003). In this model, teachers are expected to put a cluster of four to six gifted students in the same class with non-gifted students. If the clustering technique is used, administrators need to communicate their expectations so that teachers and students, including the most capable students, understand that they will learn something new and that they will be challenged every day. These gifted students are required to understand that they must demonstrate capabilities that go beyond those designated as basic (Winebrenner & Devlin, 1998).

Despite the variety of these theoretical models and strategies, few have been implemented. For example, in the US, according to the National Association for Gifted Children (NAGC) (2010-2011) very few states have specific policy regarding what components, such as differentiated instruction, should be included in gifted programs. Differentiation is important as some students, who are at-risk when learning in the regular classroom, are those with high academic ability (Reis et al., 2004; Rimm, 1990). According to Reis et al. (2004), this risk is due to the fact that
they seldom experience challenging tasks and may lose their ability and confidence to perform those tasks appropriately. Their 9 month study, in 12 third and seventh grade reading classrooms in the US, found that little differentiation of reading was provided for gifted readers in most of these classrooms. Additionally, the gifted students were not encouraged by their teachers to select advanced reading books from the school library, and little reading challenge was provided for them. Such an outcome may be due the lack of information and inexperience in differentiation by teachers. A similar result was found by Archambault et al. (1993), who investigated 7300 3rd and 4th grade teachers in public and private schools in the US. Sixty-one per cent of the participants reported never having had any training in dealing with gifted students. Further, few classroom teachers make only minor differentiation, on an irregular basis, to their regular curriculum, in an attempt to meet the needs of gifted students (Archambault et al., 1993).

The resistance toward differentiation may also be explained by the teachers feeling overwhelmed by the increasing diversity in the classroom, and the limited time available for teaching and planning. Other studies found that time pressure was cited as a response in the negative attitudes toward the needs of the gifted in mainstream classrooms (Gross, 1999a; Tomlinson, Udall, Landrum, Coleman, & Allan, 1996; Whitmore, 1980). As a consequence, they may focus their effort and attention on teaching the middle level student (Gross, 1999a; Hertberg-Davis, 2009; Skaalvik & Skaalvik, 2010; Tomlinson et al., 1996; Whitmore, 1980).

2.5.3 Ability Grouping

Many forms of grouping and gifted teaching approaches are still controversial. Some teachers are in favour of ability grouping and others are not. Thus, strategies such as ability grouping tend to polarise attitudes and, hence, are worthy of being the subject of examination.

Special classes and schools are forms of ability grouping for the gifted and usually include ability tracking with changes in curriculum (Preckel et al., 2010). Such an approach aims to improve the quality of education for gifted students. Indeed, there is ample empirical evidence that this form of grouping is beneficial for gifted students' achievement and social relationships (Goldring, 1990; Hattie, 2002; Rogers, 2002a, 2002b), and attitudes toward subject matters (Neihart, 2007). Ability
grouping also helps gifted students to overcome feelings of boredom due to the lack of challenge in the regular classrooms (Rogers, 2002b). For example, Plucker and McIntire (1996) examined the behaviour of 12 under-challenged middle school gifted students. The gifted students were found to face a higher level of boredom in regular classrooms than their non-gifted peers.

Gallagher, Harradine, and Coleman (1997) also connected boredom with the lack of challenge after they had examined 871 gifted students' views of their schooling. Across grade levels and subject areas, students associated boredom with a slow pace, too much repetition of already mastered information, the inability to move on after mastering the regular curriculum, few opportunities to study topics of personal interest, and so on. Some students felt these experiences were related to their teacher’s inability to appropriately challenge them.

A body of research has addressed the attitudes of future teachers toward ability grouping (Chipego, 2004; Chiu et al., 2008; Gallagher, 2007; Hallam & Ireson, 2003). Prior experience and explicit knowledge appear to be predictors of attitude towards ability grouping. For example, Gallagher (2007) examined the attitudes of future primary school teachers toward ability grouping and found two misconceptions held by them. First, they ascribed their resistance to ability grouping to elitism. Second, they believed that the gifted students are a role model in the classroom and other students need them. These misconceptions have developed for a number of reasons: the participants’ lack of experience with gifted students, the lack of understanding of the characteristics of giftedness, and the limited knowledge of the necessary provisions for the gifted. Further, according to Al Qarni (2010), “ability grouping remains a neglected area in the teaching of the gifted children in Saudi Arabia…although a few efforts to introduce this concept may occur at individual centre level” (p. 67). Based on previous Gallagher’s (2007) finding, it was hypothesised that future teachers in the current study would be more likely to share some popular myths and misconceptions about ability grouping, especially as this strategy does not exist as yet in the Saudi schools’ system (Al Qarni, 2010). This issue is examined in the current study in Research Question Three (Section 4.3.1).
2.5.4 Summary

Overall teachers, especially future teachers, are frequently challenged by the diversity and differences in students’ abilities and needs. They may also be confused by the plethora of approaches recommended by scholars, as strategies for supporting gifted student learning. Thus, conflicting messages about the appropriateness of some strategies might also impact upon their attitudes to act. The current study explored special education future teachers’ attitudes toward acceleration, ability grouping and differentiation.

2.6 ATTITUDES TOWARD GIFTEDNESS

Attitudes contribute to a person’s intentions to behave in particular ways (see Section 2.2.4). Therefore, it is expected that educators’ attitudes to gifted students contribute to if, and how, they will support these children. However, educators’ attitudes are not directly observable. Nevertheless, they can be inferred from responses to questionnaires or interviews (Allport, 1935). Over the last 50 years, educational researchers have become concerned about the attitudes toward gifted students by parents, administrators, special education teachers, education decision-makers, teachers in regular classrooms, university academics, and future teachers (Alfahaid, 2002; Buttery, 1978; Carrington & Bailey, 2000; Doda-Bataragoa, 1989; Forum, 1980; Berman et al., 2012; Seon-Young, Bonnie, & Jongyeun, 2004; Shiver, 1981).

The following sections address the attitudes of educators and administrators (Section 2.6.1), and the attitudes of future teachers (Section 2.6.2) toward gifted students and their education.

2.6.1 Educators and Administrators’ Attitudes toward Giftedness

Two of the first researchers to investigate attitudes toward gifted students were Wiener and O’Shea (1963). They examined attitudes of teachers, university members, supervisors, and university students toward gifted students, in six US states. Their study also explored relationships between certain selected variables and attitudes toward gifted students. Supervisors were found to have the most positive attitudes toward gifted students, followed by administrators, university members, teachers, and university students, respectively. Two significant variables were found
to positively relate to the overall attitudes toward gifted students: the type of degree held, and whether the teachers had even one course in gifted education.

In Chipego’s (2004) study the attitudes of 392 south-eastern Pennsylvania elementary classroom teachers toward gifted education were examined. The data were collected through a revised version of the Gagné and Nadeau’s (1991) “Opinions about the Gifted and their Education” questionnaire, as well as through a demographic and informational questionnaire developed by the researcher. The findings revealed that the teachers had slightly positive attitudes toward special services for gifted students, and slightly positive attitudes toward the acceptance of gifted students in their classrooms. However, their attitudes toward ability grouping and acceleration were quite negative.

Similarly, Copenhaver and McIntyre (1992) examined the perceptions of eighty-five elementary and secondary teachers of gifted students. The participants were asked to complete an open-ended questionnaire stating the characteristics that came to mind when they thought of gifted students. The participants comprised: 46 teachers (54%) with no teaching experience in gifted programs; 18 (21%) with one to two-year teaching experience; and 21 (25%) with three or more years teaching experience. Further, 28 (33%) of the teachers had taken no previous gifted educations courses/workshops; 28 (33%) had taken one to two courses/workshops; and 29 (34%) had taken three or more courses/workshops. The results showed a significant difference between the response distributions of teachers who had taken no courses/workshops and those who had taken one or more. The researchers concluded that, “it would seem that teachers who have taken one or more courses on gifted education would have learned how to recognize the various features of creativity possessed by gifted students” (p. 153).

Other research, however, has indicated that even when teachers participate in a course work or training program about giftedness, they tend to have negative attitudes toward gifted students and their education (Alfahaid, 2002; Lauritzen, 1986; Morrissey, 2006). For instance, Alfahaid (2002) conducted research in Saudi Arabia about teachers’ and administrators’ attitudes toward gifted education. Four hundred and nine primary school administrators’ and 44 primary school teachers’ attitudes revealed that the less skilled, younger primary school administrators held more positive attitudes toward gifted students, while only half of the primary school
teachers had received some training programs about gifted education. Alfahaid also concluded that some training programs, while teachers were in-service, did not seem to have any impact on teachers’ attitudes towards gifted education. In California, Lauritzen (1986) came to a similar conclusion following the examination of 53 Elementary classroom teachers’ attitudes toward gifted students, before and after receiving some training programs in gifted education. Such in-service training did not have a significant impact on increasing the positive attitudes of classroom teachers toward gifted students (Lauritzen, 1986). The often cited early research of Bishop (1968) came to the same conclusion. That study used high school gifted students’ opinions to choose successful teachers of the gifted. Thirty of the teachers were rigorously assessed, through interviews and tests. His important finding was that students and teachers did not believe that course work preparation was a factor in determining the most successful teachers of the gifted. Thus, teachers appear to have negative attitudes toward gifted students, even when they have received in-service training. However, it appears that providing future teachers with adequate training and courses is, to some extent, effective. The following section, therefore, discusses previous studies into future teachers’ attitudes toward gifted students and their education.

2.6.2 Future Teachers’ Attitudes toward Giftedness

While few researchers have explored the impact of future teachers’ training courses on their attitudes toward gifted education, such studies have emphasised the importance of investigating existing attitudes of future teachers (Bain et al., 2007; Buldu, 2005; Buttery, 1978; Carrington & Bailey, 2000; Curtis, 2005; Moon et al., 2010; Berman et al., 2012; Sumreungwong, 2003; Taylor, 2001; Tomlinson et al., 1994).

In general, future teachers tend to lack information about gifted students and their needs (Bain et al., 2007; Callahan, Cooper, & Glascock, 2003; Kiley & Jensen, 1998; Berman et al., 2012). As a result, they appear to have negative attitudes toward these students and their services (Carrington & Bailey, 2000). Bain et al. (2007) investigated the attitudes of 285 general future teachers toward the educational needs of gifted students. The alarming results showed that 76% of the participants believed that gifted students can succeed without special services provided for them. The results also showed that the majority of future teachers who participated in the study
had misconceptions about differentiation and academic acceleration. It was concluded that these two areas of specific misconceptions should be addressed in future teachers’ courses.

An Australian study of 942 primary future teachers and 528 secondary future teachers from five New South Wales universities, by Carrington and Bailey (2000), came to the same conclusion. The results indicated that primary future teachers appeared to prefer the average students more than the gifted ones, while the secondary future teachers tended to prefer the less academic students. The researchers concluded that “being gifted and striving toward academic success at school does not appear to elicit the support one would imagine from future classroom teachers” (p. 18).

When educators have little or no information about gifted students, and are not well prepared in gifted education, they are more likely to have negative attitudes toward gifted students. As suggested by Nel (1992), “negative attitudes acquired early in one’s career are difficult to change when subsequent experiences are filtered through a negative bias” (p. 23). Therefore, when future teachers complete their education programs with negative attitudes about gifted students, in the future, they may resist changing these attitudes in a positive direction.

Nevertheless, in various educational studies, future teachers involved in a gifted course, or with previous experience of giftedness, have generally indicated statistically more positive attitudes toward gifted students than those who were not thus exposed (e.g., Bangel, 2007; Bangel, Enersen, Capobianco, & Moon, 2006; Buttery, 1978; Megay-Nespoli, 1998). For example, at an accredited college in a New York district, Megay-Nespoli (1998) investigated 64 elementary future teachers’ attitudes regarding academically talented students. All teachers had participated in a course and intervention workshop about gifted education. The participants completed an attitude questionnaire that assessed their attitudes toward academically gifted students. The study showed that participating in the intervention workshops, led to an improvement in the attitudes and confidence levels of future teachers toward academically gifted students.

Buttery (1978), an early researcher examining the attitudes of future teacher’s attitudes toward gifted learners, found that future teachers with specific training about gifted learners held more positive attitudes towards the gifted students than
others. Recently, Shippen et al. (2005) investigated the influence of coursework on the attitudes of 326 future teachers enrolled in a course on exceptionalities. The participants were surveyed about their attitudes toward serving students with disabilities in mainstream classrooms. The research revealed a significant, more positive, change in future teachers’ attitudes toward serving students with disabilities in regular classrooms at the end of the course than before enrolment.

A year later, Bangel et al. (2006) measured future teachers’ attitudes after participating in some graduate level courses and workshops about gifted education. Using interviews they measured the change in future teachers’ attitudes toward, and understanding of, the needs of the gifted learners. Classroom observations and lesson plans, created by the participants, were also used to measure any change in their attitudes. The research findings show that the future teachers’ participants in the courses and workshops had demonstrably increased their understanding of the characteristics and needs of gifted students. Moreover, the participants showed an improvement in their level of professional development (Bangel et al., 2006). Earlier, a similar study by Shade and Stewart (2001), of 122 general future teachers and 72 future special education teachers toward inclusion, found that the participants had gained more information about giftedness after participating in an introductory course in special education, and that their attitudes were positively improved toward inclusion.

However, other studies have reported no positive impacts from teachers’ courses on their attitudes (Kagan, 1992b; Berman et al., 2012; Tomlinson et al., 1994). For example, Kagan (1992b), after reviewing 40 studies related to change in attitudes toward teaching, found that attitudes were based on one’s own prior experience as students, which remained unchanged by the teacher education courses. Berman et al. (2012) also study the impact of a semester-long course specific to gifted education on the attitudes of 55 future teachers. These participants were surveyed (pre- and post- open-ended questions) about their assumptions and beliefs regarding gifted children. No improvement was shown in their attitudes toward giftedness, but they became “concerned about the workload necessary to deal with gifted children in their classrooms” (p. 23). One possible reason for this attitude might be that future teachers spend thousands of hours as students during their own schooling, developing models and images of what schools look like, and what goes
on in a classroom. The result is that their beliefs are simply too strong to be completely reshaped (Tomlinson et al., 1994). Another reason, as suggested by Koehler (1985), is that the teacher education programs promote teaching skills and attitudes which the future teachers do not yet see as relevant or necessary. Thus, although teacher education programs attempt to change future teachers’ attitudes of teaching and students, the programs’ instructions might be unable to alter long-standing beliefs.

To conclude, the literature review on the impact of gifted courses on future teachers’ attitudes is mixed. Some studies found a positive relationship, that is, future teachers involved in a course about giftedness developed more positive attitudes toward gifted students than those who were not (Bangel et al., 2006; Buttery, 1978; Hudson et al., 2010; Megay-Nespoli, 1998; Morrissey, 2006). However, other studies found no change in the future teachers’ attitudes as a result of participating in a course about giftedness (Begin & Gagné, 1994b; Berman et al., 2012).

Due to the varied results in the literature about the effect of undergraduate courses on giftedness, the current research fills an important gap by studying the impact of an undergraduate gifted course in Saudi Arabia on the attitudes of future special education teachers toward the gifted. The next section, therefore, presents an overview of university courses about giftedness.

2.7 UNIVERSITIES AND PROVISION OF COURSES ON GIFTED EDUCATION

Even though future teachers seem to have a crucial impact on recognising gifted students, and meeting their future educational needs, most researchers in the field of giftedness have focused only on specific characteristics and needs of gifted students (e.g., Abunayyan, 1994; Al-Hemaisan, 1985; Catron & Wingenbach, 1986; Hyatt, 2000; Knight, 2004). In school mainstream classrooms, the increasing diversity in students’ abilities requires classroom teachers to meet the needs of all students, including gifted learners. However, if teachers have not been provided with adequate training about gifted education in their teacher college, they may not be able to meet the needs of gifted students in the classroom (Bangel et al., 2006).

While most future teachers, in most countries, have to take one course in Special Education, not all colleges require their future teachers to study a course
about gifted education (Taylor & Milton, 2006; Winebrenner, 2000). Consequently, most future teachers are not able to study the needs of these students, and may not be able to provide gifted students with differentiated curricula (Winebrenner, 2000). In Saudi Arabian universities, the only gifted education programs being undertaken are for students specialising in special education. Broadly, as noted by Winebrenner (2000), future teachers, specifically those in the US, undertaking Special Education programs are not required to take more than one course in gifted education. As a result, any negative attitudes about gifted students will, most likely, persist. In their random sample of 262 teachers in the US, McCoach and Siegle (2007) investigated attitudes toward gifted students and their education. Interestingly, their findings indicate that Special Education teachers hold more negative attitudes toward gifted students than other teachers.

In Australia, Taylor and Milton (2006) examined teacher educational course provision in the field of gifted education across all universities. They found that Australian universities did not provide adequate training courses about giftedness, which could have resulted in enhanced future teacher information and experiences about gifted students. Further, they identified that most gifted students were being taught in mainstream classrooms. They emphasised the importance of teachers’ skills in providing an appropriate environment for gifted students. Additionally, Collins (2001), who had conducted an inquiry into gifted education in Australia, emphasised that courses on gifted education would significantly help to dismiss many of the common myths about giftedness and improve the participants' attitudes towards gifted education.

The lack of adequate courses about giftedness was also noted in other countries. In South Africa, according to van der Westhuizen and Maree (2006), only two universities appear to offer courses in gifted education. Students at the University of South Africa (UNISA) are able to undertake a year certificate course in Gifted Child Education. The second, the University of Pretoria, however, offers only one compulsory course, “Giftedness and talent development”, as part of the Special Needs Education program. The special education future teacher participants, in the current study, have a similar experience to those at the University of Pretoria; they are studying a compulsory course about giftedness as part of their Special Needs Education program.
A comparison of the university models and courses about giftedness was made by Maker (1975). He analysed various undergraduate courses about giftedness, and compared the major methodological differences and reviewed previous evaluation studies and practices. The findings revealed that only a few universities offered undergraduate courses about giftedness in the US. Further, even though the title of these courses was different, the overall content was similar, with any differences occurring in the amount and kind of practical experience. Some courses also focused on cognitive learning, while others emphasised the changing of attitudes. In cases where only one course was offered, the content was usually about the history of the field, as well as the psychological and educational characteristics of gifted students, combined with an overview of current practices and strategies for the gifted. The aim was to increase information about gifted children, and it was effective in doing so (Kooyumjian, 1969). Kooyumjian (1969) designed a study to assess the cognitive and affective changes in students, enrolled in a university course, on education of the gifted. The same changes were assessed in teachers and administrators enrolled in several summer inservice training workshops on the education of giftedness. Interestingly, more than 60% of the participants gained more information from reading than through discussion and instruction. In the current research, the course under study also aims to examine whether increasing the participants’ explicit knowledge can improve their attitudes.

In some universities two courses are offered: the first is usually theoretical (coursework), while the second is more practical (internships) (Maker, 1975). According to Johnsen (2012) “The Professional Standards in Gifted Education”, were also divided into knowledge (what teachers should know) and skills (what teachers should be able to do). The first standard begins with a knowledge-based foundations component (that includes the history, theory, and understanding of a range of evidence-based strategies for the gifted). Three teacher preparation standards, also identified by the professional associations in gifted education for all educators (Johnsen, 2012), were: (1) understanding the issues in definitions, theories, and identification procedures of gifted students; (2) recognising the learning differences of gifted students and their characteristics, and identifying their related academic and social-emotional needs; and (3) understanding a range of evidence-
based strategies that provide opportunities for optimal learning. The course in the current study also includes these three aspects.

As indicated above, despite the significance of increasing the knowledge of future teachers in order to improve their attitudes, universities continue to provide few or no courses about giftedness. Further, the overall content of such courses is similar in most universities. However, other characteristics of future teachers, such as age, hometown, and contact with gifted children, were also identified as predictors for effective teaching of the gifted. The following section addresses such predictors of effective teachers of the gifted.

2.8 PREDICTORS OF ATTITUDES TOWARD THE GIFTED

Begin and Gagné (1994a) emphasised the benefit of identifying which characteristics were the best indicators of effective teachers of the gifted. This knowledge provides advantages for the gifted, as well as for the decision-makers attempting to more easily identify those with negative attitudes toward the gifted. Once identified, such corrective measures can be used to direct efforts towards the development of more positive attitudes.

Attitudinal researchers have investigated predictor variables that would indicate positive attitudes toward the gifted (Begin & Gagné, 1994a; Chipego, 2004; Curtis, 2005; McCoach & Siegle, 2007). The current research also investigated predictor variables, cited in the literature, to determine the reasons behind the differences between participants in regard to gifted education, namely: age, hometown, parents’ level of education, and contact with giftedness. The following sections address predictor variables: age (Section 2.8.1), hometown (Section 2.8.2), parent’s level of education (Section 2.8.3), and contact with the gifted (Section 2.8.4).

2.8.1 Age

Begin and Gagné (1994a) analysed 35 studies into predictors of attitudes toward gifted education. They found “age” of the participants was an essential predictor of such attitudes. For example, Schey’s (as cited in Begin and Gagné, 1994) study found that younger teachers were significantly more supportive toward the gifted than older teachers. Similarly, the study by (Alfahaid, 2002) of 409 Saudi teachers found that younger educators were more favourably disposed toward gifted
students than were older educators. Aljabber (2004) also found a significant difference between future teachers’ attitudes based on their age. Thus, it appears that as the age of teachers increases, they are more likely to resist change. Indeed, Moon, Callahan, and Tomlinson (1999) notes that beliefs about teaching remained stable over time.

In contrast, another body of research has shown that older teachers hold more positive attitudes toward the gifted than younger teachers (Cramond & Martin, 1987; Curtis, 2005; Wiener & O'Shea, 1963). For example, Curtis (2005) examined the attitudes of future teachers toward gifted students and their education. He found that female future teachers who were over 25 years held more positive attitudes toward the general needs of the gifted than younger participants. These studies do not explain clearly, the nature of the relationship. Curtis’ (2005) results may be skewed because of a gender bias, with female teachers being more nurturing than male teachers (United Nations Development Program, 2003). Nevertheless, generally, age was found to be a predictor of attitudes toward the gifted.

2.8.2 Hometown

The hometown, as a predictor, relates to rural communities having the potential to be even more concerned about elitism than larger communities (Bell & Fishkin, 1987; Colangelo, Assouline, & New, 2002). For example, Bell and Fishkin (1987) found that teacher participants in rural areas were more egalitarian. Their recommendation, therefore, was to identify the processes involved in rural schools, and to develop strategies that would overcome the resistance.

In their US study, Colangelo et al. (2002) assessed the current state of gifted rural education and school characteristics, as well as gifted education practices and obstacles in the 20 most rural states. The opinions of the majority of rural teachers toward gifted education indicated that services for the gifted in rural schools were insufficient. The teachers attributed that to a number of obstacles, including the resistance by rural communities to giftedness. It appears that the gifted students in rural and remote communities may experience even more serious intellectual frustration and social isolation than their ability peers in the cities. The acceptance of the status quo and the resistance to change may contribute to the difficulty experienced in introducing special services for the gifted. Likewise, Nelson and
Janzen (1988), investigating the attitudes of 298 rural and urban principals in Kansas State, toward gifted education, found significant differences between the two groups. For example, in contrast to urban principals, rural principals were less supportive toward gifted students and their education, possibly due to the lack of exposure to gifted education.

This lack of exposure to gifted education reflects urban living, with the ideal city being “a font for creativity and innovation” (Florida, 2003, p. 3), whereas rural areas are isolated with fewer opportunities and professional support (Al-Silami, 2010). A similar situation exists in Saudi Arabia with the gifted centres are available only in the larger cities. These centres offer training workshops for teachers and supervisors about enrichment, teaching strategies, and thinking skills (Al Qarni, 2010). Rural teachers, in contrast, do not have the opportunity to attend these workshops. It can be hypothesised, therefore, that rural teachers lack exposure to gifted education and, consequently, are less able to identify and meet the needs of gifted students. The current study, thus, sought to examine the differences between the two cultures (urban and rural) that are existed in Saudi Arabia in relation to the attitudes of future special education teachers toward gifted students and their education.

2.8.3 Parents’ Level of Education

The third predictor of future teachers’ attitudes toward gifted education is the parents’ level of education. Little research has been undertaken in this area. A comprehensive literature review study, by Begin and Gagné (1994b), found few studies highlighting the significance of the relationship between parents’ level of education and their attitudes. One example was the research by McCoach and Siegle (2007), who identified a significant relationship between this predictor and attitudes toward gifted education. Other studies have also shown that “parents’ levels of education” have critical role in supporting giftedness in their children (Al-Silami, 2010; Peña, 2000; Preston, 2006). For example, Preston (2006) revealed that a strong relationship existed between parents’ level of education and students’ creative thinking abilities. The more educated family was most likely to encourage their children’s giftedness (Peña, 2000). Similar results were identified by Hongli and Yulin (2006), namely, that there were differences in students’ creative thinking abilities between the two groups (educated and non-educated families). Not
surprisingly, the interests of students with less educated parents about giftedness are lower than students with highly educated parents (Al-Silami, 2010). Hence, parents’ level of education was of interest in the current study.

2.8.4 Contact with Giftedness

Earlier research has shown that contact with giftedness is an indicator of positive attitudes toward gifted education (Bangel et al., 2006; Butter, 1978; Megay-Nespoli, 1998; Moon et al., 2010). Yet, knowing a gifted friend or being gifted oneself is a better way to know about giftedness. Begin and Gagné (1994), among other studies (e.g., McCoach & Siegle, 2005), examined these two variables as possible predictors of attitudes toward the gifted. The result suggested that those who perceive themselves as academically gifted or who have gifted friends and family tend to harbor more positive attitudes toward the gifted. Begin and Gagné (1994) combined these two variables and named them “contact with giftedness”.

A number of studies have examined this variable in regard to attitudes toward the gifted. For example, Zietlow (1998) found that teacher participants, who had contact with the gifted, had more positive attitudes towards their gifted students and their education. Southern, Jones and Fiscus (1988) also found that contact with the gifted, either themselves or that of a friend, was most likely to lead to a positive attitude to gifted education. Recently, Berman et al. (2012) examined the perceptions of in-service teachers and preservice education teachers about gifted students and their needs. The data, gathered via a pre-post course questionnaire, identified existing beliefs and assumptions that individuals, in various phases of teacher development, held regarding gifted students. The findings showed contact with the gifted to be the largest contributing factor or predictor in relation to preconceived notions about giftedness. This contact includes self-perception as gifted or having a gifted friend. Further, such preconceived beliefs about gifted students positively impacted upon their willingness and approach to teach gifted children (Berman et al., 2012). The current study addresses this variable to determine whether it is a potential predictor of attitudes of future special education teachers toward gifted students in Saudi Arabia.
2.9 THEORETICAL FRAMEWORK OF THE STUDY

A number of studies have strongly influenced this study: the theoretical position of Fishbein and Ajzen (1981); and by the personal knowledge theory (Polanyi, 1966). When exploring the relationship between attitudes and implicit knowledge (namely beliefs), it is assumed that attitudes are influenced by implicit knowledge.

Implicit knowledge was first discussed by the philosopher Polanyi (Polanyi, 1966). He distinguished between implicit and explicit knowledge, and noted that implicit knowledge is difficult to express, and that "we should start from the fact that we can know more than we can tell" (italics in original) (p. 4). Nonaka (1994) defined explicit knowledge as an information which is encoded, stored and disseminated. Explicit knowledge has also been referred to as information that can be expressed and distributed verbally, collected in books and manuals and, in the current study, the gifted course (Kogut & Zander, 1992; Nonaka, 1994).

In fact, “knowledge” is used in everyday language. Sometimes people refer it to know-how, while others use it to reflect experience. Mostly, the terms knowledge and information are used interchangeably. In addition, knowledge is possessed by each individual and is a product of information and experience. It includes the norms by which individuals evaluate new inputs from their surroundings (cultural knowledge) (Davenport & Prusak, 2000). Gamble and Blackwell’s (2001) definition of knowledge was similar to that of Davenport and Prusak (2000): "Knowledge is a fluid mix of framed experience, values, and information” (p. 3). Thus, the term implicit knowledge, as it is used in this thesis, is seen as belief in a set of three components: explicit knowledge (information), experience, and cultural knowledge held by an individual, in this case future teachers.

As stated above, “cultural knowledge” is considered a component of implicit knowledge. It is the shared perceptions, values and beliefs of a society (Choo, 1998). As defined by Schwartz and Davis (1981), cultural knowledge is “a pattern of beliefs and expectations shared by the organization’s [or society’s] members” (p.33). Such culture knowledge is deeply rooted in held beliefs and values. According to Sathe (1983), cultural knowledge is a “set of important understandings that members of a community share in common” (p. 6). This cultural knowledge is used to assign value and significance to new information, and is learned from parents, teachers, peers, and
others whose values, attitudes, beliefs, and behaviours take place in the context of their own organisational or societal culture (Richerson & Boyd, 2004). Additionally, cultural knowledge is often so strongly embedded in an individual's daily life that the individual may be unaware it. These definitions recognised that culture is a component of implicit knowledge. In Saudi Arabia, the general culture recognises the importance of supporting the needs of the gifted.

Figure 2.3. adapted from Fishbein and Ajzen’s (1981) Theory of Reasoned Action, and the Personal Knowledge Theory (Polanyi, 1966), shows the theoretical framework of the current study. The Theory of Reasoned Action is still contemporary in explaining the relationship between beliefs, attitudes, and behaviour (Ajzen, 2012). The Personal Knowledge Theory (1966) helps to explain the three components of implicit knowledge (belief), namely explicit knowledge, cultural knowledge, and experience. The adapted diagram illustrates the relationship between these three components. It is this implicit knowledge (belief) that influences attitudes, while it also acknowledges the influence of attitudes on people’s behaviours.

Figure 2.3. Theoretical framework of this study

(Adapted from Fishbein and Ajzen (1981), and Polanyi (1966)).
2.10 SUMMARY

The above discussion highlights the findings of the literature reviews on future teachers’ attitudes toward gifted students and gifted education. The review confirmed that teachers’ beliefs influence their attitudes toward the gifted. Furthermore, based on theories by Fishbein and Ajzen (1975), and Polanyi (1966), and the definition of belief (implicit knowledge) by Kagan (1992a), future teachers’ attitudes toward gifted students and their education appear to be formed by their previously acquired information, cultural knowledge, and experience. Significantly, the relationship between beliefs and attitudes was shown to exist. For example, there is evidence of the impact that teachers have on students’ academic achievements, and that future teachers bring their implicit knowledge (beliefs) and attitudes toward gifted students into their classrooms. Additionally, these attitudes direct their behaviour and practices in the classroom (Wood & Floden, 1990). Thus, it is hypothesised that future teachers need to have the opportunity to be exposed to gifted education if positive attitudes are to be developed.

Importantly, the construct of giftedness comprises many definitions, with individuals also holding different conceptions of its meaning. For this reason, knowing the definition used in schools, as well as the underlying concepts that frame the definition, is vital knowledge for future teachers to obtain. Also, it is essential that future teachers to be well-prepared in gifted programs in order to have a positive attitude toward their gifted students. Hence, it is hypothesised that understanding of giftedness will enable the future teachers to develop positive attitudes toward gifted students and their education.

Underpinning their approach to gifted students and their education are the negative attitudes of the special education teachers. Additionally, teacher in-service training about the needs of gifted students does not seem to have any impact on their attitudes towards gifted education. However, providing future teachers with adequate training and courses appears to be more effective.

Almost two decades ago, Begin and Gagné (1994a) sought to predict teachers’ attitudes toward gifted students and their education by identifying the characteristics of teachers and their demographic background. They also recommended that the relationship between future teachers’ characteristics and attitudes toward gifted students be examined. The current study has addressed these concerns.
The theoretical framework of this study showed that attitudes cannot be separated from beliefs. Thus, in order to change the attitudes of future teacher, it is important to understand their beliefs. Therefore, the current research examined the attitudes of future special education teachers towards giftedness, the origins of these attitudes, and the extent to which participating in the gifted course impacts on their attitudes in relation to special services for the gifted.
3 Design and Methods

3.1 INTRODUCTION

The aim of this research was to examine the attitudes of future special education teachers toward gifted students and their education. It also sought to address the effect of a course about giftedness on the attitudes of the participants, regarding special services for the gifted, at a University in Saudi Arabia. The research questions were:

1. What are the attitudes of Saudi Arabian future special education teachers toward gifted students and their education?
2. What factors predict the attitudes of future special education teachers toward gifted education (i.e., age, the participants’ hometown, level of their parents’ education; and contact with giftedness)?, and
3. To what extent does participating in the gifted course impact on the attitudes of future special education teachers regarding special services for the gifted?

Six sub-questions were also developed to address Research Question Three more deeply:

a) What are the attitudes of future teachers, in special education, towards the special learning needs of gifted students, and their support for the provision of special services (needs and support), before and after participating in the course?

b) What are the attitudes of future teachers, in special education, toward gifted education, based on personal beliefs and opinions about educational priorities (resistance toward differentiation) before and after participating in the course?

c) What are the attitudes of future teachers, in special education, toward grouping practices (ability grouping) for the gifted, before and after participating in the course?
d) What are the attitudes of future teachers, in special education, concerning the contributions that the gifted make to society (social value), before and after participating in the course?

e) What are the attitudes of future teachers, in special education, toward acceleration or grade skipping practices (acceleration) for the gifted, before and after participating in the course?

f) What are the attitudes of future teachers, in special education, toward the (rejection) of the gifted by others, before and after participating in the course?

This chapter provides an overview of the methodology adopted in the current study, namely the research design (Section 3.2); the methods (Section 3.3); a description of the gifted course (Section 3.4); ethical consideration and quality of research (Section 3.5); and chapter summary (Section 3.6).

3.2 RESEARCH DESIGN

Generally, research is conducted to enhance people’s understanding of a topic or an issue, and to answer questions that are related to that specific issue (Cohen, Manion, & Morrison, 2007). In addition, identifying the research design of a study is important because it communicates information about key features of the study (Harwell, 2011). According to Harwell (2011), in educational research, it is appropriate to characterise a research study’s design as qualitative, quantitative, or as mixed methods that involves both qualitative and quantitative methods. The design is usually determined by the research problem being investigated.

Both quantitative research and qualitative research require the systematic investigation of the problem, issue or question. Scholars (e.g., Corbetta, 2003; Maxwell, 2005) have examined the differences between the quantitative research and qualitative research. There appears to be agreement that one of the key differences between qualitative research and quantitative research is the nature of the data. The following definition helps to further understand the differences between these approaches, quantitative research is “a type of educational research in which the researcher decides what to study; asks specific, narrow questions; collects quantifiable data from participants; analyses these numbers using statistics; and conducts the inquiry in an unbiased, objective manner” (Creswell, 2008, p. 46).
Quantitative research makes use of questionnaires, surveys, and experiments to collect data that can be tabulated into numbers, “which allows the data to be characterised by the use of statistical analysis” (Hittleman & Simon, 1997, p. 31). Additionally, quantitative researchers tend to measure variables on a sample of subjects; they test the relationships between these variables by utilising statistics such as frequencies, correlations or means. The findings derived from the sample study are then generalised to the behaviour of population. In addition, the focus in quantitative approach is on the testing theories (Meyers, Gamst, & Guarino, 2006).

Unlike the quantitative research, the qualitative research relies heavily on the participants’ experiences, and asks broad questions designed to elicit relevant information about the phenomenon. According to Creswell (2008), the data from the qualitative approach are collected through texts; these texts are then described and analysed for themes. Qualitative researchers seek an in-depth understanding of human behaviour, and the reasons that govern such behaviour. Hence qualitative researchers seek out the ‘why’, as well as the ‘how’ through the analysis of unstructured information. Finally, qualitative research is conducted in a subjective manner (Creswell, 2008). Flick (2009), in his book on qualitative research, argued that qualitative research provides researchers with new sensitivities to phenomena and enables the researcher to reflect on the phenomena in new and different ways.

Quantitative and qualitative researches also differ in their epistemological assumptions. The quantitative approach relies on positivist epistemologies about the relationship between quantifiable variables (Guba, Lincoln, & Denzin, 2005). Thus, researchers in quantitative studies tend to hypothesise about relationships between the independent and dependent variables in relation to theories. Three research designs are associated with quantitative research: experimental, correlational, and survey (Creswell, 2008). In contrast, the qualitative approach is often associated with relativistic philosophies, such as interpretivism. Interpretivist researchers tend to “elicit the interviewee’s views of their world, their work, and the events they have experienced or observed” (Rubin & Rubin, 2005, p. 28).

Recently, a third methodological movement was emerged follows quantitative approaches and qualitative approaches, namely; mixed methods research (Creswell & Plano Clark, 2007; Tashakkori & Teddlie, 2003). The following sections discuss mixed methods designs (Section 3.2.1), and structure of the study (Section 3.2.2).
3.2.1 Mixed Methods Designs

During the last 50 years, different names were used to describe mixed methods research. However, according to Johnson, Onwuegbuzie, and Turner (2007) the term *mixed methods designs* has gained dominance over other terms such as *integrative design* and *mixed design*. Creswell and Plano Clark (2007) defined the mixed methods research as follows:

Mixed methods research is a research design with philosophical assumptions as well as methods of inquiry. As a methodology, it involves philosophical assumptions that guide the direction of the collection and analysis of data and the mixture of qualitative and quantitative approaches in many phases in the research process. As a method, it focuses on collecting, analysing, and mixing both quantitative and qualitative data in a single study or series of studies. Its central premise is that the use of quantitative and qualitative approaches in combination provides a better understanding of research problems than either approach alone. (p. 5)

According to the above definition, a design to be considered mixed methods, must employ qualitative and quantitative approaches at any stage, including research questions development, sampling strategies, data collection methods, data analysis, or conclusions.

Historically, the initial interests in mixed methods research began in the 1950s when Campbell and Fiske (1959) advocated for the collection of multiple methods of quantitative data to study the validation of psychological traits. Later, in the 1970s, the combination of both quantitative and qualitative data appeared in different studies (Jick, 1979; Sieber, 1973), and the question arose was whether or not quantitative and qualitative data could be combined, especially when they ascended from different perspectives (Reichardt & Cook, 1979).

A number of social scientists perceive mixed methods as incompatible, and argue they should not be mixed (Campbell & Stanley, 1966; Guba et al., 2005; Schwandt, 2000). Guba (1990), a qualitative purist, represented the qualitative position by positing that “accommodation between paradigms is impossible” (Guba, 1990, p. 81). However, others believe that the qualitative data can supplement the perceived weaknesses of the quantitative data, and *vice versa* (Creswell, 2008; Johnson & Onwuegbuzie, 2004; Onwuegbuzie & Leech, 2005). In fact, the mixed
methods designs allows the researcher to understand different aspects of the investigated issue and, thus, compensates for any methodological weaknesses (Johnson & Onwuegbuzie, 2004). It has been used successfully in a number of studies (Jensen, Kauchak, & Rowley, 2001; Murtha, 2008).

In an attempt to simplify mixed methods designs, several researchers have developed typologies (Creswell & Plano Clark, 2007; Johnson et al., 2007). Typology is defined as “classification schemas used to describe various mixed methods designs” (Lisle, 2011, p. 93). Creswell and Plano Clark (2007) proposed four main designs types, with multiple variants based on emphasis and purpose: (1) the triangulated design, to obtain different but complementary data; (2) the two-phase explanatory design, which builds or explains initial quantitative data; (3) the exploratory design, which is also two-phased but directed by the qualitative data; and (4) the embedded design, in which one data set provides a supportive secondary role.

The Embedded Design, which is used in the current study, mixes the different data sets at the design level, with one type of data embedded within the other set (Caracelli & Greene, 1997). In fact, it can be a challenge to differentiate between a study using an Embedded Design and a study using one of the other three mixed methods designs revealed by Creswell and Plano Clark (2007). However, the key question, according to Creswell and Plano Clark (2007), is whether the secondary data type is playing a supplemental role within the overall design. In the current study, the qualitative data are the secondary data and embedded within the quantitative set.

Given the nature of this research, the embedded mixed methods was considered the most appropriate design to use in the current study because it provided a systematic way for data collection, analysis and result reporting. The outcome was a deeper understanding of the issue being studied, namely, the attitudes of future special education teachers toward gifted students and their education.

### 3.2.2 Structure of the Study

Embedded mixed methods design was used to collect quantitative and qualitative data. The design initially allowed the documentation of attitudes and relationships to any demographic or experiential factor. The quantitative component investigated a cohort of future special education teachers taking a semester course in
gifted education. It also investigated the pre- and post-change in attitudes of the participants towards gifted students and their education. This design involves a sequential presentation of: a pre-test questionnaire, semi-structured interviews, followed by an intervention (the gifted education course), a post-test questionnaire and, finally semi-structured interviews. The following diagram represents the study structure.

Figure 3.1. Five phases of the study

The qualitative component involved eight participants enrolled in the gifted education course as a component of the special education program. Thus, the quantitative dimension of the study was complemented with qualitative data collected through semi-structured interviews. These interviews probed participants’ views, beliefs and attitudes, in depth, and enabled the researcher to identify the reasons for the participant’s possible change of attitudes.

The interviews were an important source for the case study design (Tellis, 1997). For example, an interpretive or explanatory interview helps to understand and explain a situation. They reveal the participant’s stories of their experiences in ways that make sense to them (Denzin, 1989). Thus, the contextual complexities are captured and the phenomena revealed, which are rooted in the lived experiences. The interviews were guided by the six themes identified in the “Opinions about the Gifted and Their Education” questionnaire (Gagné, 1991; Gagné & Nadeau, 1985).
3.3 METHODS

The methods section describes the study context and the participants. It discusses the quantitative data (Section 3.3.1) and qualitative data (Section 3.3.2). It concludes with a summary (Section 3.3.3).

3.3.1 Quantitative Data: Phases 1 and 4 “Questionnaire”

This section describes the participants, the questionnaire, data collection and data analysis of quantitative phases 1 and 4.

3.3.1.1 Participants

The participants were university students at a tertiary institution’s Department of Special Education, Faculty of Education. The University is accredited by the Saudi Arabian Ministry of Higher Education, and funded by the government of Saudi Arabia.

The students were undertaking a four year full-time Bachelor of Special Education degree. The graduates can be employed as Primary, Secondary, or High School teachers. These future special education teachers were undertaking an introductory course about gifted education as part of their degree program. The participants included all Saudi Arabian special education future teachers, enrolled in the gifted course at this university (N= 90) during year 2010. The participants (all male) ranged in age from 19-40 years. The majority (91%) was between 20-24 years old, the more normal preservice teachers’ age in Saudi Arabia. At the time the study was conducted, they had not commenced their internship or professional experience. The internship is required in the last six months of the teachers’ programs (King Saud University, 2012).

Those participants 25 years and older (9%) tended to be from a group of in-service teachers who held a diploma in education, but were upgrading their qualification to the bachelor’s degree in Special Education (King Saud University, 2012). The participants would be employed by the Ministry of Education to teach boys in single-sex schools after they graduated.

3.3.1.2 Questionnaire

Questionnaires are developed and used over many years by researchers to collect quantitative data. The use of questionnaires is the most widely used data
collection method in educational studies (Radhakrishna, Francisco, & Baggett, 2003). They help gather information on knowledge, facts, attitudes, opinions, and behaviours (e.g., Jacobs, 1972; Preckel et al., 2010; Berman et al., 2012; Thurstone & Chave, 1929b). According to Creswell (2008), investigators administer questionnaires “to a sample or to the entire population of people to describe the attitudes, opinions, behaviours, or characteristics of the population” (p. 388).

The questionnaire in the current study was used to establish the attitudes of special education future teachers. It was divided into two sections (demographic and attitudes). The demographic questions sought information about the participants’ age, hometown, the level of their parents’ education, and contact with giftedness. The participants’ attitudes toward gifted students and their education in Saudi Arabia were obtained using the “Opinions about the Gifted and Their Education” questionnaire (Gagné, 1991; Gagné & Nadeau, 1985). This questionnaire adopted Likert’s Summative Rating Scale, which is widely used in most attitudinal studies (Malhotra, 2006; Stern & Keislar, 1975). It has a set of favourable and unfavourable attitude statements, which can indicate the participants’ positive or negative attitudes toward an object on a 5-point scale, from “strongly agree”, “agree”, “no opinion”, “disagree”, to “strongly disagree”.

### Development of the Questionnaire

In their extensive review of attitudinal studies, Begin and Gagné (1994a) found some methodological weaknesses in many previous studies. One weakness was that the measurements of the attitudes were either inconsistent or inappropriate (e.g., Badt, 1957; Dettmer, 1985). Further, a number of studies failed to use empirically valid scales or failed to provide sufficient evidence of reliability to measure attitudes toward the gifted students. According to Begin and Gagné (1994a), numerous studies related to the predictors of attitudes toward giftedness; they failed to account for “a significant and substantial proportion of variation in attitude among educators, parents, or the general public” (p. 75). They recommended following a blueprint for future research, namely: (1) using a reliable and valid measure of attitude; (2) introducing a sufficient number of pertinent and adequately operationalised explanatory factors; (3) obtaining a suitable sample from a relevant population; and (4) using appropriate statistical techniques to analyse data.
Based on their review of the literature, and the above four criteria, Begin and Gagné (1994a) conducted a study that addressed these criteria. Their sample consisted of 139 teachers and 138 parents. Gagné and Nadeau (1985; 1991) used two parallel experimental forms (A and B) with a 60 item scale.

The psychometric assessment of the 90 item pool (30 items common to both forms) was conducted by administering the two forms. These items included “various facets of this general attitudes: principles, common objections, needs, assessment of existing services, preferable types of intervention, accelerative enrichment, etc.” (Begin & Gagné, 1994a, p. 76). The 90 items were selected by ten specialists in gifted education from the items pool.

Several psychometric characteristics were analysed by Gagné and Nadeau (1985; 1991). For example, content validity was obtained by preparing an item pool through a systematic review of existing attitude scales, “a careful analysis of newspaper articles, and interviews with parents and teachers” (p. 76). The reliability coefficients (Cronbach’s Alpha) of .91 were obtained for the two forms of scales (Begin & Gagné, 1994a). Similar results were obtained for both forms, with the Form A means 3.42 (SD = .51), and Form B means 3.41 (SD=.50). The total mean of the common items for both forms were 3.42 (SD=.58) for From A, and 3.38 (SD=.57) for Form B. The correlation between the two series of 30-item means was .946, which indicates a similarity between the two forms (Gagné & Nadeau, 1985).

Several analyses were performed, including factor analysis, item analysis, comparisons of items common to both forms, and the homogeneity of the subgroups (Gagné & Nadeau, 1985). In the final shorter form, six factors relating to attitudes toward the gifted emerged: Needs and Support, Resistance toward differentiation, Social Value, Rejection, Ability Grouping, and School Acceleration. The low-scale correlation items were eliminated to maximise the reliability of the scale. Ultimately, only 34 items remained as they best represented “the six factors identified in the study” (Gagné, 1991, p. 1).

These thirty-four items were chosen to measure six dependent variables related to attitudes toward the gifted, namely: participants’ attitudes toward the needs of gifted children and support for special services, their levels of resistance toward differentiation based on personal belief and opinions about educational priorities, attitudes toward the social usefulness of gifted persons in society, attitudes toward
difficulties facing the gifted such as rejection of gifted persons by others in the immediate environment, attitudes toward special homogeneous group, classes, schools, and attitudes toward school acceleration (Gagné, 1991).

According to Begin and Gagné (1994a), the statements cover areas related to the general attitudes and comprise principles, common objection, needs, assessments of current services, and types of interventions that may be preferable by teachers (e.g., enrichment and acceleration). The statements were assigned to the individual sub-scales: Needs and Support (items 1, 9, 11, 14, 15, 24, 30, and 32), Resistance toward differentiation (items 3, 4, 5, 12, 16, 18, 23, 26, 27, and 28), Social Value (items 13, 17, 25, and 33), Rejection (items 19, 22, and 31), Ability Grouping (items 2, 6, 20, and 21), and School Acceleration (items 7, 8, 10, 29, and 34). The responses to each item are provided on a five-point Likert scale. It required the participants to tick the appropriate box, for each of the 34 questions. The choice of five scaled statements were, namely; Strongly Agree, Agree, Undecided, Disagree, or Strongly Disagree. The response “Strongly Agree” was be coded as one, and the “Strongly Disagree” was coded as five.

The Gagné and Nadeau’s (1985; 1991) questionnaire was successfully utilised in several recent studies (Begin & Gagné, 1994a; Chipego, 2004; McCoach & Siegle, 2007; Tirri et al., 2002). This questionnaire was used in the current study to measure special education future teachers’ attitudes toward gifted students and their education. The questionnaire was translated into Arabic and back translated to check for validity.

3.3.1.4 Translation of the Questionnaire

The most common reason for translating a questionnaire is that the targeted population has a different language from the one in which the original questionnaire was designed. To ensure a high quality of translation, the following procedures were determined to be the most appropriate. As Hambelton (1993) emphasised, it is important to take care while translating and securing equivalence:

Unless the translation work is done well, and evidence is compiled to establish, in some sense, the equivalence of the two versions of the test, questions about the validity of translated tests will arise. Also, the validity of comparisons among countries where different versions of the test have been
administered will be in doubt until questions about the equivalence of the versions are resolved. (p. 60)

The back-translation technique, for example, verifies a questionnaire translation. It has three steps: (1) translating the questionnaire from the source language into the targeted one; (2) having a different translator translate the version back into the original; and finally (3) comparing the original questionnaire with the back-translation of the original (Harkness & Schoua-Glusberg, 1998). This technique is commonly and widely used by researchers because of its adequacy and relative simplicity (e.g., Brutus, 2008; Durmusoglu, 2009; Song, 2001). The back-translation technique was used in the current study.

Since the original questionnaire was developed in English, a translation from English (the source) into Arabic (the target) was needed. The questionnaire went through different procedures to test its validity and reliability:

1. The researcher translated the original questionnaire into Arabic.

2. The translated version was reviewed by two academic members at a Saudi university, with excellent command of both Arabic and English, to verify the translation.

3. Then, it was reviewed by university lecturers (n=10) in psychology and gifted education in Saudi Arabia to determine the appropriateness of each item (e.g., culturally and clarity of expression). These expert reviewers provided evidence of content validity with ratings of ≥ 80% for relevance, readability, and appropriateness of scale items. However, Item 26 (Taxpayers should not have to pay for special education for the minority of children who are gifted), as suggested by the reviewers, was rephrased as it was not applicable to the Saudi context, because there is no taxation of income in Saudi Arabia. The rephrased question is “The government should not have to pay for special education for the minority of children who are gifted”.

4. In the final stage of the questionnaire translation, the translated questionnaire was back translated into English by an independent translator, and a committee compared the back-translated English version with the original version. The committee included the researcher; one
Faculty of Education member, at a Saudi university, holding a PhD in gifted education, who did not participate in previous steps of the translation process; and an English-speaking person. Ambiguities and discrepancies were discussed between the back translated version and the original version of the attitudinal questionnaire. The evaluation of the English versions of the questionnaire focused on wording, grammatical structure of the sentences, similarity in the meaning, and relevance. Resolving the discrepancies took into consideration the Arabic version that had been back translated into English.

5. The output of the four steps was the Arabic Attitudinal Version, which has a conceptual, semantic, and content equivalence of the English version of the attitudinal questionnaire.

### 3.3.1.5 Data Collection

The quantitative data were gathered by using Gagné and Nadeau’s (1985) pre-post attitudinal questionnaire. The participants’ attitudes were examined before and after their enrolment in the gifted course, as means of determining whether the participants’ attitudes were changed by the course.

The questionnaire was conducted at the Special Education Department, within the selected University, Saudi Arabia. A permission letter requesting the distribution of the questionnaires to the participants was sent to the chairperson of the University; approval was given. The course, offered in the Spring semester, 2010, was a one semester (16 weeks), with three-hour long lectures a week. The future special education teachers were tested twice; prior to and after the experience of attending the course. According to Gravetter and Wallnau (2008):

> In a repeated-measures study, we are interested in whether or not there is a systemic difference between the scores in the first treatment condition and the scores in the second treatment condition. The hypothesis test will use the difference scores obtained from a sample to evaluate the overall mean difference, μD, for the entire population. (p. 346)

The future special education teachers were invited, in the week before starting the course (pre-test) and in last week of the course (post-test), to complete the questionnaire, fold it, and place it in the box located at the front of the lecture room. The participants were asked to include, in the questionnaire, an identifier code that
enabled the researcher to match the pre- and post-test responses. The questionnaire took approximately 30 minutes to complete. Confidentiality was assured as the participants placed their own questionnaire in the sealed box.

3.3.1.6 Data Analysis

Gagné and Nadeau’s (1985; 1991) “Opinions about the Gifted and Their Education” questionnaire allowed for the total scores and six sub-scale scores. Importantly, the six sub-scale scores indicated the in-depth and, more specifically, the participant’s or group’s attitudes than general total scores can do. Descriptive statistical procedures in SPSS version 18 were used to allow for summarising, organising and reducing the large data set. The quantitative data comprised six independent variables from the demographic questions, and six dependent variables from the sub-scales. To obtain the answer to the first study question (What are the attitudes of Saudi Arabian future special education teachers toward gifted students and their education?), the six sub-scale scores and the total scores were calculated.

According to Gagné and Nadeau (1991), the value of the means allows for a better interpretation of the scores from the three sub-scales and the total score. In the current study, all means had a value that ranged from 1 to 5. The results, using Gagné and Nadeau’s categorisation of means and indications, are shown in the following table.

Table 3.1
Gagné and Nadeau’s Categorisation and their Indications

<table>
<thead>
<tr>
<th>Means</th>
<th>Indications</th>
</tr>
</thead>
<tbody>
<tr>
<td>Means below 2</td>
<td>Indicate very negative attitudes.</td>
</tr>
<tr>
<td>Means between 2 – 2.75</td>
<td>Indicate slightly negative attitudes.</td>
</tr>
<tr>
<td>Means from 2.75 – 3.25</td>
<td>Indicate ambivalent attitudes.</td>
</tr>
<tr>
<td>Means from 3.25 – 4</td>
<td>Indicate slightly positive attitudes.</td>
</tr>
<tr>
<td>Means above 4</td>
<td>Indicate very positive attitudes.</td>
</tr>
</tbody>
</table>

To obtain the answer to the second question, a multiple linear regression analysis was used to reduce the data set, identify any significant predictions, and
determine the direction of the relationship. A Paired Samples t-test was utilised to obtain the answer to the third question.

3.3.2 Qualitative Data: Phases 2 and 5 Semi-Structured Interviews

This section addresses phases 2 and 5 of the qualitative data, the semi-structured interviews. Creswell (2008) identifies five required steps in qualitative research: (1) identifying participants and locations; (2) gaining access to the organisation; (3) determining the types of data collection; (4) developing data collection forms; and (5) conducting the process in an ethical manner.

3.3.2.1 Participants

Through the participants own identifier codes on their questionnaire, 10 participants were selected, identified, and invited to participate in one-on-one voluntary 40 minutes interviews. The selection was based on extreme case sampling, which, according to Creswell (2008), is "a form of purposeful sampling in which you study an outlier case or one that displays extreme characteristics" (p. 215).

The participants were selected on the basis of their means’ scores, that is: the five participants with lowest mean scores, and the five participants with highest mean scores on the attitudinal questionnaire (Gagné, 1991). The interview process occurred in two phases (pre and post the course). Eight of the invited participants agreed to the pre-interviews (four with lower mean scores and four with higher mean scores). Of the eight participants on the pre-interview, six participated in the post-interview. Two participants (one from the high mean group and one from the low mean group) were not reinterviewed because of their time constraints. They responded to the invitations for interviews by sending e-mail replies indicating their busy schedule.

3.3.2.2 Data Collection

The interview, guided by the study's theoretical framework, had a mixture of three kinds of questions: the main questions (e.g., what special strategies should teachers use with gifted children?), the follow-up questions, and the probes (See Appendix B). According to Rubin and Rubin (2005), the main questions are used, in advance, to cover each part of the broad topic. The follow-up questions are asked to obtain an explanation of the themes or concepts that the interviewees have made,
while the probes questions “are techniques to keep a discussion going while providing clarifications” (Rubin & Rubin, 2005, p. 137).

Each 40 minute voluntary interview explored, in-depth, the participants’ attitudes and sought to identify what experiences or circumstances might have led them to hold such attitudes. The interviews also probed into the ways the course influenced their attitudes. The findings uncovered important aspects of the questionnaire related to the participants’ attitudes toward gifted students.

The interviews were conducted at the Special Education Department, within the selected University. The interviews were conducted before and after the participants attended the gifted course in the second semester, 2010. Eight participants were interviewed individually over three days in a conference room located in the Department of Special Education.

3.3.2.3 Data Analysis

In the current study, the qualitative data were analysed by using thematic analysis. Thematic analysis “is the most commonly used form of analysis in qualitative research, particularly research involving interviews” (Willis, 2006, p. 271). Braun and Clarke (2006), who take an eclectic view of thematic analysis, posit that “thematic analysis can be a method that works both to reflect reality and to unpick or unravel the surface of ‘reality’” (p. 81). In other words, their approach sees thematic analysis as an approach in its own right, like grounded theory and CDA. However, it does require the researcher to make clear his theoretical position.

The thematic content analysis method proceeded as follows. After each semi-structured interview, the data were immediately transcribed verbatim by the researcher. After completing the interview response transcription, the researcher read the data twice to check for transcription accuracy. The data were then coded as described next.

There are two approaches to coding data, each operating with slightly different rules: a priori and emergent. When dealing with a priori coding, the categories are established prior to the analysis, based upon theories and finding of previous systematic studies (Boyatzis, 1998; Stemler, 2001; Weber, 1990). This approach allows the researcher to confirm, amplify or refute existing theories (Boyatzis, 1998).
Gagné and Nadeau’s (1985) systematic study showed that attitudes toward the gifted could be examined from six perspectives, namely:

1. **Supporting** the needs of gifted students
2. **Resisting** differentiation
3. **Social value** of gifted students
4. **Rejection** of gifted persons by others
5. **Ability Grouping**, and

These perspectives were used as a priori codes in the current study.

With *emergent coding*, categories are established following some preliminary examination of the data (Stemler, 2001). Corbin, Strauss (2008) defined emergent coding as “the analytic process through which concepts are identified and their properties and dimensions are discovered in data” (p. 101). The goal of emergent coding is to “become sensitive to the number and types of properties that might pertain to phenomena that otherwise might not be noticed or noticed only much later” (Corbin & Strauss, 2008, p. 82). The researcher identified some emergent codes from the data. During the analysis, categories were added and refined, and subcategories were created. The initial codes were designated to represent any interesting features that occurred throughout the entire data set. These codes were revised numerous times to generate a master codebook. The researcher then collated new codes into themes. Finally, the themes were reviewed to check that they were in concurrent with their coded extracts and with the entire data set.

In the reporting of results, the interpretation of the answers is supported by the presentation of the data in the form of participants’ quotes, with each quote being followed by a citation number that identified the participants’ numbered questionnaires.

### 3.3.3 Summary

This section shows the alignment of each data source and how it informed the research questions. They are summarised in Table 3.2.
Table 3.2

*Alignment of Data Sources*

<table>
<thead>
<tr>
<th>Research Questions</th>
<th>Data Source</th>
</tr>
</thead>
<tbody>
<tr>
<td>3. To what extent does participating in the gifted course impact the attitudes of future special education teachers regarding special services for the gifted? (e.g., Needs and support, resistance toward differentiation, ability grouping, social value, acceleration, and rejection).</td>
<td>By comparing pre-test and post-test results from Gagné and Nadeau’s (1985, 1991) questionnaire and interviews data.</td>
</tr>
</tbody>
</table>

3.4 **COURSE DESCRIPTION: PHASE 3**

This section provides a detailed description of phase 3, the “*Introduction to Giftedness and Creativity–255*” special course. Designed for third-year undergraduate students in the Special Education Program at a Saudi University’s Department of Special Education, the compulsory semester-long course is taught by an Associate Professor of Psychology. This is students’ only course about giftedness. In Spring semester, 2010, 100 3rd-year special education students, who were male, and Saudi future teachers (the participants) enrolled in the course. The purpose of the course was to improve the future teachers’ knowledge of giftedness (see Figure 3.2).

The above description provides an overview of the rationale for the current study. The study addressed the students’ attitudes before and after participation in the course in order to study the effectiveness of such a course on improving their attitudes towards gifted education. Accordingly, it was essential to provide detailed
information about the way the course was designed and how it might have contributed to a change in attitudes about giftedness.

The course introduced future special education teachers to the characteristics and needs of gifted students in Saudi Arabia. The following (Figure 3.2) is a brief description of the course in Arabic, and its English translation.

**Figure 3.2. A brief description of the gifted course**

The following is a brief description of the gifted course—English translation:

The course aims to provide special education future teachers with a background overview of the importance of giftedness in Saudi culture and its inception. It also intends to illustrate the distinction between the different terms: “intelligence”, “genius”, “intellectually gifted”, “talent”, and “creativity”, and to identify the characteristics of gifted students. In addition, it strives to provide knowledge of identification procedures for gifted, and to identify programs of care, problems and teaching methods of gifted students.

The learning objectives of this course translated from the course outline are:

1. To have a general background on the concept of giftedness creativity and related theories.
2. To recognize the importance of the gifted and their role in the development of societies.
3. To understand the genetic and environmental factors affecting giftedness and creativity.

4. To recognise the tools and methods necessary for identifying the gifted.

5. To identify the characteristics and needs of the gifted in light of recent differing theories.

6. To recognise different programs for the gifted students, and

7. To understand problems facing gifted students.

The lecturer taught these topics in one three hour session per week (Wednesdays from 8 to 11 am) for 16 weeks, an entire semester. The lecturer collated all the information presented in the lecturer slides into a book of notes which the students used for pre-lecture reading. The students also take notes during the lectures, with an allocated amount of time (approximately 15 minutes) at the end of each lecture for questions. The students were not required to do any more than interact or discuss the course during the allocated time for the course. The course design, called conclusion-oriented or lecture-based, has long been used in universities in the Middle East, as well as throughout the world (Adekoya & Olatoye, 2011; McKeachie, Svinicki, & James, 2005). The 2003 Arab Human Development Report observed:

Communication in education is didactic, supported by set books containing indisputable texts in which knowledge is objectified so as to hold incontestable facts, and by an examination process that only tests memorisation and factual recall. (United Nations Development Program, 2003, p. 54)

The following sections describe: the course schedule and syllabus (Section 3.4.1), the study six themes in relation to the course (Section 3.4.2), and relevance of the course content to gifted literature (Section 3.4.3).

3.4.1 Detailed Course Schedule and Syllabus

The gifted course includes eleven topics, presented in the semester-long course at the University’s Department of Special Education. Table 3.3 shows the weekly course schedule, with the chapters in the table referring to the information provided by the lecturer in the printed material.
Table 3.3

Weekly Course Schedule

<table>
<thead>
<tr>
<th>Topics</th>
<th>Number of weeks</th>
<th>Time of contact hours</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chapter I: Introduction to the study of gifted.</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Chapter II: The most important concepts of Arab and foreign talent.</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Chapter III: The impact of some genetic and environmental factors on the talent.</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Chapter IV: Characteristics of gifted with general intellectual ability.</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Chapter V: Characteristics of gifted students in other domains.</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Chapter VI: Identification methods for gifted students.</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Chapter VII: Programs for the gifted students.</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Chapter VIII: The most important problems for the gifted students.</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Chapter IX: The concept of creativity.</td>
<td>1</td>
<td>3</td>
</tr>
<tr>
<td>Chapter X: Role of the family and the school in the care of gifted.</td>
<td>2</td>
<td>6</td>
</tr>
<tr>
<td>Chapter XI: The role of teacher of gifted and their characteristics.</td>
<td>1</td>
<td>3</td>
</tr>
</tbody>
</table>

The recommended reading text was “Giftedness and Creativity” (Alseleman, 2006).

3.4.2 The Study Six Themes and the Course

The study measured the participants on six dependent variables (from Gagné and Nadeau’s (1991) attitudinal questionnaire), namely: Needs and Support, Resistance to differentiation, Social Value, Rejection, Ability Grouping, and School Acceleration. To determine whether these themes were addressed in the course’s eleven topics, the content for the “Introduction to Giftedness and Creativity- 255” special course was analysed. Table 3.4 presents the themes and topics, the time per
theme, which varies from one week for Acceleration to three weeks for Needs and Supports, and Resistance.

Table 3.4

*The Study Six Themes and Course Topics*

<table>
<thead>
<tr>
<th>No</th>
<th>Theme</th>
<th>Chapter</th>
<th>Week</th>
<th>Topic</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Needs and support</td>
<td>Chapter I</td>
<td>1</td>
<td>Introduction to the study of gifted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter IV</td>
<td>1</td>
<td>Characteristics of gifted with general intellectual ability.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter V</td>
<td>2</td>
<td>Characteristics of gifted students in other domains.</td>
</tr>
<tr>
<td>2</td>
<td>Resistance</td>
<td>Chapter X</td>
<td>2</td>
<td>Role of the family and the school in the care of gifted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter IV</td>
<td>1</td>
<td>Characteristics of gifted with General intellectual ability.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter III</td>
<td>1</td>
<td>The impact of some genetic and environmental factors on the talent and excellence.</td>
</tr>
<tr>
<td>3</td>
<td>Social value</td>
<td>Chapter I</td>
<td>1</td>
<td>Introduction to the study of gifted.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter VII</td>
<td>2</td>
<td>Programs for the gifted students.</td>
</tr>
<tr>
<td>4</td>
<td>Rejection</td>
<td>Chapter VIII</td>
<td>1</td>
<td>The most important problems for the gifted students.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter XI</td>
<td>1</td>
<td>The role of teacher of gifted and the their characteristics</td>
</tr>
<tr>
<td>5</td>
<td>Ability grouping</td>
<td>Chapter VII</td>
<td>2</td>
<td>Programs for the gifted students.</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Chapter VIII</td>
<td>1</td>
<td>Problems for the gifted students.</td>
</tr>
<tr>
<td>6</td>
<td>Acceleration</td>
<td>Chapter VII</td>
<td>1</td>
<td>Programs for the gifted students.</td>
</tr>
</tbody>
</table>
3.4.2.1 Theme 1: Needs and support

The first goal of the course was to introduce future teachers to the needs of gifted students. This theme was emphasised in three topics (as per Chapters I, IV, and V). Chapter I introduced the future teachers to the historical background of the concepts of giftedness, creativity and related theories. It included a review of giftedness from the conceptualisation of ancient to recent history (e.g., Ancient China, Ancient Greece, Ancient Arabs, Islamic civilisation, Rome Renaissance, Europe, from Galton through Binet, Terman, and the Theories of Intelligence from 1978 onwards). The development of the concept giftedness, from being related to a high IQ, to the recent definitions where giftedness has become more multidimensional, and includes the interplay of culture and values on the development of talents and gifts (Course Notes, pp. 11-12, Slide 87, Week 1). Figure 3.3 presents, as an example, two slides, in Arabic and the English translation.

![Figure 3.3. Development of the concepts of giftedness](image)

The topic about the differences between the two terms “gifted” and “talented” using Gagné's (2009) Differentiated Model of Giftedness and Talent (DMGT), was also included in the course, in order to emphasise the needs of the gifted for special service to develop their talents (Course Notes, pp. 22-30, Slide 13, Week 1).

Both Chapters IV and V from course notes aimed to develop an understanding of the unique characteristics of gifted students, which set them apart from their age-peers (Course Notes, pp. 53-78, Slides 1-71, Weeks 4 & 5). The topics show that gifted children are at risk and need specialised support to meet their unique needs.
Figure 3.4 represents one slide that summarises, in Arabic, the gifted characteristics followed by its English translation.

**Figure 3.4. Summary of gifted characteristics**

- **General intellectual ability**
  - Have a higher mental age, compared
  - High level of verbal ability.
  - Excellent memory
  - Inferential thinking skills
  - Numerical computational capability
  - Convergent problem solving

- **Psychomotor ability**
  - Very restless and overly busy
  - Shows rapid, seemingly excessive, almost compulsive speech
  - Walking and talking earlier than other children
  - Motor skills at an early age
  - Energetic

- **Non-cognitive ability**
  - Confidence
  - Motivation
  - Leadership
  - Creativity
  - Perfectionistic
  - Persistence
  - Sensitive
  - Sense of humour
  - Wide range of interests
3.4.2.2 Theme 2: Resistance

Resistance, addressed in three chapters (Chapter X, Chapter IV, and Chapter III) from the course notes, explains the ideological opposition held by some to differentiation for the gifted, as well as opinions about educational priorities. Topics, for example in Chapter X, dealt with misconceptions held by educators in relation to gifted students and their education, such as, gifted students can do it on their own (Course Notes, p. 20, Slides 23, 24 Week 10). They also highlighted the importance of the role of schools in meeting all students’ needs, including the gifted (Course Notes, pp. 26, 49, Slides 20-41 Week 10).

In Chapter IV the topic relate to the characteristics of the gifted, for example:

   a) Learns easily and rapidly.
   b) Have varied interests and exhibit strong curiosity.
   c) Have an unusual capacity for processing information.
   d) Unusual intensity; persistent and goal directed; perseverant in their interests.
   e) Has an excellent memory (Notes, p. 75, Slides 3, 22,-56, Week 4).

Additionally, the perceived negative characteristics of the gifted are also highlighted:

   a) Can easily become bored with routines and repetitive assignments.
   b) May not always pay close attention to directions.
   c) Can be too authoritative.
   d) Dominate discussions.
   e) May lose interest in subjects or schools (Notes, p. 75 Slides 54-56, Week 4).

In Chapter III the importance of environmental factors (including teachers and schools) on the talent are presented. For example, “gifted students, like all students, possess specific educational needs and can be at risk for low achievement if these needs are left unmet” (Course Notes, p. 124, Slide 24, Week 3).
3.4.2.3 Theme 3: Social Value

The social value of the gifted was addressed in two chapters (Chapter I and Chapter VII). Chapter I introduced the value of gifted individuals to societies across history and countries. Specifically, it emphasised the recognition of giftedness in Islam (Course Notes, pp. 3-4 Slides, 45-56, Week 1), with the first lecture starting with a statement by King of Saudi Arabia about giftedness (see Figure 3.5 below, the Arabic and English versions):

![Figure 3.5. Statement by King of Saudi Arabia about giftedness](image)

The King’s view reflects the value of the gifted in Saudi society. This value of the gifted in various societies was also discussed in Chapter VII. Such values show that supporting gifted children is important culturally, nationally, socially and economically (Course Notes, pp. 124-126, Slides 8-13, Week 8).

3.4.2.4 Theme 4: Rejection

The rejection of gifted persons by others in the immediate environment, such as teachers and peers, was addressed in two chapters in the course (Chapter VIII and Chapter XI). For example, Chapter VIII, with the title “The most important problems for the gifted students”, illustrates rejection as a common problem that the gifted may face by their class-mates and teachers. It also illustrates how the gifted protect themselves from peer rejection by hiding their talents (Course Notes, p. 124, Slide 6, Week 8). Additionally, it shows how schools can contribute to the problem by providing unchallenged environments and inflexible programs (Course Notes, p. 160, Slide 24, Week 10).

In Chapter XI, the role of the teacher of the gifted, and their characteristics, is given. For example, these teachers are generally responsible for one or more of the following roles:
a) Organising enrichment activities for gifted students and their teachers in the school.

b) Coordinating regular curricular activities so gifted students can work at a pace and level appropriate with their ability.

c) Integrating regular curriculum and special program experiences (Course Notes, pp. 181-182, Slide 23, Week 11).

A number of characteristics of these teachers include:

a) High degree of intelligence.

b) Expertise in their area (mathematics, writing, etc.).

c) Being a lifelong learner.

d) Emotional stability.

e) Interests in giftedness.

f) Being well organised.

g) Have a sense of humour.

h) Being enthusiastic.

i) Strong belief in individual differences.

j) Highly developed teaching skills and knowledge (Course Notes, pp. 183-192, Slides 8-20, Week 11).

3.4.2.5 **Theme 5: Ability grouping**

The ability grouping theme involves information on special classes and schools (Chapter VII and Chapter VIII). Chapter VII, for example, identified the most important programs for the gifted students. Initially, however, it presented justifications for providing the gifted students with special services, namely:

a) The challenge gifted students are facing in regular classrooms (e.g. the majority of gifted students spend most of their day in regular classroom settings with no instruction tailored to meet their unique needs; these gifted students are put at risk of failing to achieve their potential).
b) Gifted students, like disabled students, have special needs and have the right for special services.

c) Benefits the gifted bring to society.

d) Underachievement among gifted students (Notes, pp. 123-126, Slides 4-13, Week 8) (see Figure 3.6 for Arabic and English translation).

**Figure 3.6. Justifications for special services for the gifted**

Further Chapter VII outlines some important programs for the gifted, including enrichment and grouping, such as the “The Enrichment Triad Model” (Course Notes, pp. 135-146, Slides 3-41, Week 9). The types of enrichment were described, for example, summer academic enrichment programs, and having an enrichment resource room. However, the emphasis was on ability grouping such as, special classes and schools. Here the gifted children are grouped with peers of similar ability and they are expected to perform at a higher level than in a regular classroom. One slide summarised ability grouping (see Figure 3.7 for Arabic and English translation). Chapter VII also highlighted the benefit for the gifted from being in special classrooms with teachers who know and understand their learning characteristics and their needs.
3.4.2.6 **Theme 6: Acceleration**

Acceleration, the final theme (Chapter VII), is often recommended for gifted students in acknowledgment that they learn faster and need educational experiences that are appropriately paced for their rate of learning. The term is defined and its various forms explained. Some forms provide children with the opportunity to learn material at a faster rate (compacting, telescoping), while other forms require that children are moved to a more appropriate learning level, such as skipping a grade (a popular form of acceleration), or early entry (Course Notes, pp. 148-152, Slides 54-69, Week 9). The advantages and disadvantages of these acceleration types are also presented. The emphasis was more on skipping grade as it is the only acceleration strategy accredited by the Saudi educational system. It also highlights the advantages of grade skipping for the gifted (Course Notes, pp. 149-150, Slides 61-65, Week 9) (see Figure 3.8 for Arabic and English translation).

![Figure 3.7. Ability grouping](image)

![Figure 3.8. Benefits of acceleration](image)
The gifted course also dealt with other topics related to giftedness, including the definitions of giftedness and related concepts (Chapter II), the identification methods for gifted students (Chapter VI), and the concept of creativity (Chapter IX).

3.4.3 Relevance of Course Content to Gifted Literature

The course content was established as appropriate by a comparison between its content and that recommended in the literature. Chapter 2 provided an analysis of the literature on gifted education and highlighted the critical knowledge that teachers of the gifted need to know. For instance, the Professional Standards in Gifted Education, according to Johnsen (2012) includes knowledge (what teachers should know). The first standard begins with a knowledge-based foundation component (the historical and theoretical foundations, and an understanding a range of evidence-based strategies for the gifted. Three teacher preparation standards identified by Johnsen are: (a) understanding the issues in definitions, theories, and identification procedures of gifted students; (b) recognising the learning differences of gifted students and their characteristics, and identify their related academic and social-emotional needs; and (c) understanding a range of evidence-based strategies that provide opportunities for optimal learning. The gifted course in the current study includes these three aspects (see Figure 3.2).

A comparison of universities models and courses about giftedness were examined by Maker (1975). The analysis addressed various gifted courses, compared their major methodological differences, and reviewed their evaluation methods and practices. The findings showed that though the titles were different, the overall content was similar, namely: gifted definitions, characteristics, identifications, socio-emotional issues, and programs. However, the pedagogical approach may be different. The content of the course in the current study also aligned with those elements found in the other university courses.

The Australian Senate Report into the Education of Gifted and Talented Children made a number of recommendations about the gifted course content and approaches (Collins, 2001). One of these recommendations was that “newly graduated teachers have at least a semester unit on the special needs of gifted children in their degrees. Recommendation 15 (paragraph 4.72) also emphasised that “The Commonwealth should specify professional development on issues to do with
giftedness as a priority in the Quality Teacher Programme”. Significant components of gifted education were recommended for inclusion into all future teacher courses, namely: characteristics and identification of gifted students (including gifted underachievers), social and emotional issues, understanding of the myths versus the facts about gifted students, the value of giftedness, and curriculum options for gifted students. The gifted course in the current study included these components (see Table 3.3).

To conclude this discussion, the gifted course being investigated introduced future special education teachers to the characteristics and needs of gifted students. It provided the participants with a background to, and overview of, the importance of giftedness and its inception. Further, it illustrated the distinction between the various terms (intelligence, genius, intellectually gifted, talent, and creativity) to identify the characteristics of gifted students. Additionally, the course aimed to enhance their knowledge of the following aspects: the identification procedures for the gifted, programs of care, problems, and teaching methods associated with gifted students. Thus, the current research explored the participants’ attitudes to the six themes covered in the course’s eleven topics. The following is the course assessment method.

Course Assessment Method: Students are assessed to identify their achievement of course goals. The course assessment includes two mid-term exams (total of 30%), attendance and participation in the course (5%), an essay (5%), and a final exam that tested the understanding and ability to recall core concepts in the course (60%). The essay consisted of two parts: a discussion paper (3-5 pages), and a 5 minute presentation, to the group, that outlined the issue as detailed in their papers. For this item, only the paper attracted an assessment weighting. The six selected topics are listed below:

a) The definition and identification of gifted students.

b) The genetic and environmental factors affecting giftedness and creativity.

c) Characteristics of gifted with general intellectual ability.

d) Programs for the gifted students.

e) Problems facing gifted students.
f) The role of the family and the school in the care of gifted.

Table 3.5 represents each assessment task, week due and weighting.

Table 3.5

*Information on Each Assessment Task of the Course*

<table>
<thead>
<tr>
<th>Item</th>
<th>Assessment</th>
<th>Due Week</th>
<th>Weighting%</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Mid-term exam 1</td>
<td>Week 7</td>
<td>15</td>
</tr>
<tr>
<td>2</td>
<td>Mid-term exam 2</td>
<td>Week 12</td>
<td>15</td>
</tr>
<tr>
<td>3</td>
<td>Essay</td>
<td>Week 10</td>
<td>5</td>
</tr>
<tr>
<td>4</td>
<td>Attendance and participation</td>
<td>During the semester</td>
<td>5</td>
</tr>
<tr>
<td>5</td>
<td>Final Exam</td>
<td>Week 16</td>
<td>60</td>
</tr>
</tbody>
</table>

3.5 **ETHICAL CONSIDERATION AND QUALITY OF RESEARCH**

This section presents; the ethical consideration (Section 3.5.1) and quality of the research (Section 3.5.2).

3.5.1 **Ethical Considerations**

This project was being undertaken as part of PhD project. Ethical approval (Ethics # 1000000571) was obtained from the Queensland University of Technology, and approved for study was obtained from the Saudi University. Prior to the research implementation, the researcher informed the participants verbally about the study, as well as via an information sheet attached to the questionnaire. The information sheet included the exact purpose, methods, process, risks and benefits involved.

As explained to the participants, the aim of the research was to determine the extent to which participating in the gifted course impacted on the attitudes of future special education teachers regarding gifted students and their education at a University in Saudi Arabia. The participants were informed that their participation in the interviews and questionnaires was voluntary, and that they could withdraw from the study at any time, without comment or penalty. Further, they were reassured that their decision to participate in no way impacted upon their program assessments, nor was there any risk beyond their normal day-to-day living. Additionally, they were assured that all comments and responses were deidentified and treated confidentially,
and their names were not required on the responses. The return of the completed questionnaires was accepted as an indication of the participants’ consent to be involved in the project. Attending the interviews was also accepted as an indication of the participants’ consent to participate in the project.

3.5.2 Quality of the Research

The quality of this research is discussed below in terms of criteria used to evaluate quantitative (Section 3.5.2.1) and qualitative (Section 3.5.2.2) approaches.

3.5.2.1 Quantitative Approach

Campbell and Stanley (1966) provide guidance on assessing the quality of quantitative research and highlight the threats, in terms of internal (Section 3.5.2.1.1) and external threats (Section 3.5.2.1.2).

3.5.2.1.1 Internal Threats to Validity

Inferences are said to possess internal validity if a causal relation between two variables is properly demonstrated. Causal inferences may be made if the following conditions are met: The "cause" precedes the "effect" in time (temporal precedence), the "cause" and the "effect" are related (co-variation), and there are no plausible alternative explanations for the observed co-variation (e.g., history and testing effects) (Campbell & Stanley, 1966).

History and testing were the two internal threats to the validity of the current study. Reading or attending courses or programs other than what is being offered in the intervention may enable future teachers to become more familiar with gifted children and their needs; this additional information could result in more or less favourable attitudes toward the gifted. However, this threat was reduced by asking the interviewed participants, at the end of the course, if they had experienced anything more than the course about giftedness during that time.

Further, testing the effects might also be a threat to validity, for example, taking the pre-test may affect the outcomes of the post-test. Campbell and Stanley (1966) stated that, “for attitudes toward minority groups a second test may show more prejudice” (p. 9). However, the long period (16 weeks) between the pre-test and post-test in the current study reduced the threat of testing contamination.
3.5.2.1.2 External Threats to Validity

One external validity threat relates to generalising from a study undertaken in a specific context to a broader population or theory (Creswell, 2008). The findings of this study, therefore, are only relevant to male future special education teachers enrolled in the gifted course at the specified Saudi University. It cannot be generalised to all future teachers in Saudi Arabia because no gifted course is provided for general education future teachers. Additionally, it cannot be extrapolated to other countries, although there may be similarities to other male future teachers in other Muslim countries.

Another threat comes from the use of a convenience sample, where all the participants are from only one university, and are taught by the same faculty member and in the same fashion.

A third threat to the external validity relates to the situation and confidence of the treatment condition, that is, the independent variable being well defined. The independent variable in this study is the experience of undertaking a course on gifted education. The course is outlined in Section 3.4 to illustrate the course content.

3.5.2.2 Qualitative Approach

Scholars have proposed a different set of scientific criteria for ensuring the validity of qualitative research (Lincoln & Guba, 1985; Maxwell, 1992; Sandelowski, 1993; Smith, 1990), which should be aligned with the worldview of the qualitative paradigm. Lincoln and Guba (1985) developed four criteria to judge the trustworthiness or rigor of qualitative research: truth value, applicability, consistency, and neutrality.

Table 3.6
Guba’s Model of Trustworthiness

<table>
<thead>
<tr>
<th>Criterion</th>
<th>Qualitative Approach</th>
<th>Quantitative Approach</th>
</tr>
</thead>
<tbody>
<tr>
<td>Truth value</td>
<td>Credibility</td>
<td>Internal validity</td>
</tr>
<tr>
<td>Applicability</td>
<td>Transferability</td>
<td>External validity</td>
</tr>
<tr>
<td>Consistency</td>
<td>Dependability</td>
<td>Reliability</td>
</tr>
<tr>
<td>Neutrality</td>
<td>Confirmability</td>
<td>Objectivity</td>
</tr>
</tbody>
</table>
These four criteria will be discussed individually below.

3.5.2.2.1 Truth value

Truth value is similar to the concept of internal validity discussed in the quantitative approach (Section 3.5.2). Further, the truth value involves the discovery or experiences of phenomena as perceived by the participants (Sandelowski, 1993). Thus, truth value can be achieved by presenting a faithful description and interpretation of the human experience that is under examination. In the current study, the following three strategies for credibility were utilised:

1. Referential adequacy: The questions were developed and discussed with the supervisors and experts in the field. The researcher also applied a pilot interview that informed the main study.

2. A mixed methods design: The researcher used in-depth individual semi-structured interviews, as well as an attitudinal questionnaire.

3. Structural coherence: The interviews were guided by the study's theoretical framework. The interviews had a mixture of three kinds of questions: main questions, follow-up questions, and probes to ensure that the discussions were going, while providing clarification as required.

3.5.2.2.2 Applicability

The applicability measure is similar to external validity in quantitative research. It refers to generalisation and representativeness. Creswell (2008) stated that, "in qualitative inquiry, the intent is not to generalise to a population, but to develop an in-depth exploration of a central phenomenon" (p. 213). However, the qualitative component might enable the researcher to identify any threats to validity, in the quantitative component, by probing attributions for beliefs and the possible existence of external experiences. These potential limitations were reduced using the following two strategies:

1. A mixed method design enhanced the applicability of the findings by looking at one group of participants who experience a particular treatment. The pre-and post-test analysis permitted the drawing of inferences about the effect of the intervention. It documented the difference in the pre-test and post-test scores on the phenomenon of interest.
2. For the purpose of this study, reaching data saturation was ensured by using extreme case sampling which, according to Creswell (2008), is "a form of purposeful sampling in which you study an outlier case or one that displays extreme characteristics" (p. 215).

3.5.2.2.3 Consistency

Consistency is similar to the concept of reliability in quantitative research. According to Lincoln and Guba (1985), consistency refers to the consistency of the result every time the data collection is replicated with the same participants or in a similar context. The aim of qualitative research is to learn from the participants rather than to control them. The following two strategies were utilised in the current research to ensure consistency:

1. A dependability audit is possible because individual in-depth semi-structured interviews were conducted and were audio tape-recorded to ensure an audit trail.

2. A description of the method of data collection is explained in detail.

3.5.2.2.4 Neutrality

Data neutrality refers to the freedom from bias in the research process. It was achieved when the truth value, applicability, and consistency were established. The following two strategies ensured neutrality:

1. A tape recorder was used to capture the interviews verbatim.

2. Peer debriefing: The research findings and process were discussed with the researcher’s supervisors (experts in the qualitative methodology used, and the phenomena of interest), and their feedback obtained.

The presence of the researcher was also seen as a possible threat to the qualitative research (Patton, 2002). This concern was minimised by using the following three steps:

1. The researcher introduced himself to the participants as an external researcher from another institution and explained the nature of the research.

2. The researcher motivated the respondent to provide high-quality answers by explaining the possible contributions of the research.
3. The questions were probed indirectly.

3.6 CHAPTER SUMMARY

The aim of the current research was to examine the attitudes of future special education teachers toward gifted students and their education. It also assessed the effect of participating in a course about giftedness on those attitudes. The mixed methods design sought to answer the three research questions that focused on; the attitudes of special education future teachers, factors that may influence these attitudes and the impact of the course. The quantitative data were obtained from 90 future special education teachers by using Gagné and Nadeau’s (1991) attitudinal questionnaire and a range of demographic questions. To obtain in-depth qualitative data, semi-structured interviews were undertaken with eight participants. The gifted course being investigated introduced future special education teachers to different aspects about giftedness; including gifted definitions, characteristics, programs, problems, and teaching methods associated with gifted students.
4 Results

4.1 INTRODUCTION

The current investigation into the attitudes of future special education teachers toward gifted students and their education, also examined the ways a formal course about giftedness might help improve the participants’ their attitudes. The results are reported according to each research question.

This chapter represents the demographic data (Section 4.2); descriptive analysis (Section 4.3); inferential analysis (Section 4.4); and a summary of findings (Section 4.5).

4.2 DEMOGRAPHIC DATA

In examining the attitudes of the future special education teachers toward gifted students and their education in Saudi Arabia, the study examined the differences in their attitudes. These attitudes were based on the following demographic variables: age, the participants’ hometown, the level of their parents’ education, and contact with giftedness. Further, these variables, related to attitudes (Begin & Gagné, 1994a; Chipego, 2004; Curtis, 2005; McCoach & Siegle, 2007), were used as predictors to help identify how the participants’ attitudes were related to each predictor, as well as to investigate the differences among the participants. The following sections relate to age (Section 4.2.1), the participants’ hometown (Section 4.2.2), the level of their parents’ education (Section 4.2.3), and contact with giftedness (Section 4.2.4).

4.2.1 Age

This demographic questionnaire data were collected from 90 out of 100 special education future teachers. For the analysis, their ages were categorised in two ranges: “older” and “younger”. The largest number of participants (91%) was in the younger category, between 20 and 24 years old, which represented the normal preservice age in Saudi Arabia (King Saud University, 2012). The remaining participants (9%) were in the older category (25 years and above). This group represented teachers who held
a diploma in education, but were upgrading their qualification by studying for a Bachelor’s degree in special education.

4.2.2 Hometown

The demographic variable of hometown was reported in both rural and urban areas (see Table 4.1). Most participants lived in an urban region (83.3%), while the other participants (16.6%) grew up in a rural area. Previous research has shown significant differences in educators’ attitudes toward gifted education between rural and urban Saudis (Al-Silami, 2010), reflecting a worldwide difference (Nelson & Janzen, 1988). Hence, it is likely that future teachers from urban areas have more positive attitudes toward the gifted than rural participants.

4.2.3 Parents’ Education

The third demographic variable, the level of education of the participants’ parents also varied. The majority of the participants had a father with no university degree (68.9%), with about a third (31.1%) having a university degree. The participants’ mothers also had different levels of education. Most had no university degree (85.4%), while 14.6% had university degrees. Hence, the majority of the participants came from the less well educated families (see Table 4.1).

4.2.4 Contact with Giftedness

When asked if they perceived themselves as gifted, most participants (75%) answered “No”, but 24.7% perceived themselves as gifted. This outcome may result from many participants being unfamiliar with the characteristics of the gifted. Further, their perceptions of giftedness may have had them reflecting on their achievements at school. Indeed, the qualitative data (Section 4.4.2) showed that participants lacked knowledge about the characteristics of the gifted. The general perception of the gifted person in Saudi Arabia is that they have high memorisation ability in contrast to their peers (Al Qarni, 2010). This general perception appeared to be held by the participants. For example, one participant stated that they are gifted because their “memorisation capacities are higher than their peers” (PRC70). Saudi Arabia, like many Middle Eastern countries, education is based on rote learning and memorisation, so these comments are not unexpected.
A World Bank study into the quality of schooling in the Middle East also found that students were taught to memorise and retain answers to “fairly fixed questions” with little or no meaningful context, and that the school system, in the main, rewarded those who are skilled at being passive knowledge recipients” (Rugh, 2002, p. 399). These popular passive teaching and learning practices are still used in today’s Saudi schools (Kampman, 2011).

The participants also had different answers in relation to having gifted friends. Less than half of the participants (46%) had gifted friends, while 53.3% reported not having any gifted friends. These answers suggest a lack of familiarity with the characteristics of giftedness.

Table 4.1 presents the frequencies and percentages of the participants’ demographic information. As can be seen from Table 4.1, most participants lived in an urban region and came from less educated families. The majority of the participants also did not believe they were gifted.

Table 4.1

<table>
<thead>
<tr>
<th>Variables</th>
<th>Demographics</th>
<th>Frequencies</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>20-24</td>
<td>81</td>
<td>91</td>
</tr>
<tr>
<td></td>
<td>25 or more</td>
<td>8</td>
<td>9</td>
</tr>
<tr>
<td>Hometown</td>
<td>Urban</td>
<td>75</td>
<td>83.3</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>15</td>
<td>16.7</td>
</tr>
<tr>
<td>Father’s education level</td>
<td>School grad.</td>
<td>62</td>
<td>68.9</td>
</tr>
<tr>
<td></td>
<td>Uni grad.</td>
<td>28</td>
<td>31.1</td>
</tr>
<tr>
<td>Mother’s education level</td>
<td>School grad.</td>
<td>76</td>
<td>85.4</td>
</tr>
<tr>
<td></td>
<td>Uni grad.</td>
<td>13</td>
<td>14.6</td>
</tr>
<tr>
<td>Perceiving oneself as</td>
<td>Yes</td>
<td>22</td>
<td>24.7</td>
</tr>
<tr>
<td>gifted</td>
<td>No</td>
<td>67</td>
<td>75.3</td>
</tr>
<tr>
<td>Having gifted friends</td>
<td>Yes</td>
<td>42</td>
<td>46.7</td>
</tr>
<tr>
<td></td>
<td>No</td>
<td>48</td>
<td>53.3</td>
</tr>
</tbody>
</table>
4.3 DESCRIPTIVE ANALYSIS: RESEARCH QUESTION ONE

This section presents the descriptive analysis which was utilised to answer Research Question One. The quantitative data from the Gagné and Nadeau’s attitudinal questionnaire (1991) were analysed using the Statistical Package for Social Sciences (SPSS) version 18. This questionnaire contains six categories: (a) Attitudes toward Need and Support, (b) Attitudes toward Social Value, (c) Resistance toward differentiation, (d) Attitudes toward Ability Grouping, (e) Attitudes toward Acceleration, and (f) Attitudes toward Rejection of the gifted by others. First, Cronbach’s Alpha coefficients of reliability were calculated for the pre-test questionnaire in order to examine the internal consistency of the items. According to Hinton (2004), “Reliability is defined as the ability of measuring instrument to measure the concept in a consistent manner” (p. 301). It can be assessed in various ways, including: test-retest, and internal consistency. The internal consistency was measured by Cronbach’s alpha, as it is the most widely used and sophisticated of the tests.

The full questionnaire was used for its reliability, namely, the “Opinions about the Gifted and their Education” (1991). The Cronbach’s Alpha coefficients from 0.60 to 0.79 represent moderate reliability and from 0.80 to 0.89 good reliability (George & Mallery, 2009). The overall reliability was $\alpha = 0.73$, which means that the reliability was moderate. Further, three of Gagné and Nadeau’s (1991) sub-scales had either moderate or good reliability (i.e., Need and Support $\alpha = .80$, Resistance to differentiation $\alpha = .60$, and Ability Grouping $\alpha = .64$). However, Cronbach’s Alpha coefficients for the other three sub-scales appear poor (i.e. Social Value $\alpha = 0.46$, Acceleration $\alpha = 0.40$, and Rejection of the Gifted by Others $\alpha = 0.43$). However, before judging the reliability estimates for these sub-scales as low, caution is needed. That is, the specific circumstances of the individual study should be taken into account (Pedhazur & Schmelkin, 1991). For example, while Cronbach’s alpha examines the average inter-item correlation of the items in the scale, it is sensitive to the number of the items in the questionnaire (Cortina, 1993).

The current study had only a small number of items in each of the three sub-scales (Social Value, Acceleration, and Rejection of the gifted by others), possibly resulting in the relatively low coefficients. According to Cronbach (1951), and Voss, Stem Jr, and Fotopoulos (2000), Cronbach’s alpha estimation of reliability increases
as the number of items increases in the scale. Moreover, Swailes and McIntyre-Bhatty (2002) argued that when the number of items in the sub-scale is below seven, the effect on the alpha is noticeable. The low reliability sub-scale items (Social Value, Acceleration, and Rejection of the gifted by others) were less than seven, which may have resulted in the low alpha estimates.

Further, sample size had been shown, previously, to influence the reliability estimates. For example, Klein, Sollereder, and Gierl (2002) found reliability issues when they used the original version of the “Test of Visual-Perceptual Skills”. In that study the participants were students aged 6 to 12 years; the sample size was 294. The alpha for the individual sub-scales ranged from 0.32 to 0.89. The authors ascribed the low alpha estimates to the small sample size for each age group. Helms et al. (2006) also argued that, as the number of participants increased, the amount of covariance among the item responses increased. This outcome also indicates the reason for the results obtained in the current study. Consequently, the small sample size may have influenced the reliability findings.

Due to reliability issues, a conservative analysis approach was taken and only the three sub-scales with reliable alpha coefficients were analysed quantitatively for question one: What are the attitudes of future special education teachers toward gifted students?. These three sub-scales were: (a) needs of the gifted and support for special services, (b) resistance to differentiation based on personal belief and opinions about educational priorities, and (c) attitudes toward ability grouping. However, the other three sub-scales, which appear to have lacked internal consistency, were analysed qualitatively (item-by-item).

According to Gagné and Nadeau (1991), the value of the means allows for a better interpretation of the scores from the sub-scales and the total score. In the current study, all means had a value that ranged from 1 to 5. The results, using Gagné and Nadeau’s categorisation of means and indications, are shown in Table 3.1 (Section 3.3.4).

4.3.1 Research Question One: Attitudes toward the Gifted

A descriptive analysis of the data for Research Question One is reported for the following three sub-scale areas from Gagné and Nadeau’s (1991) questionnaire: (a)
needs of gifted students and support meant for special services, (b) resistance toward
differentiation, and (c) attitudes toward ability grouping (see Table 4.2).

This categorisation, used to score the questionnaire (Opinions about the Gifted
Children and Gifted Education), provided a broad spectrum of the participants’
attitudes about gifted students and their education. The 90 participants were asked to
indicate their level of agreement or disagreement with each item on a five point scale
(1 = Strongly Agree, 2 = Agree, 3 = Undecided, 4 = Disagree, and 5= Strongly
Disagree). The results are reported using descriptive statistics to present the means,
frequencies, modes and standard deviation. The data (Table 4.2) show that the
majority of the participants held, overall, a slightly positive attitude (M=3.43) toward
the gifted students and their education.

Table 4.2
Descriptive Analysis of the Scale

<table>
<thead>
<tr>
<th>Sub-scales</th>
<th>N</th>
<th>Mean</th>
<th>Mode</th>
<th>Standard Deviation</th>
<th>Skew</th>
<th>Kurt</th>
<th>95% Confidence Interval for Mean</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Lower</td>
</tr>
<tr>
<td>Needs and support</td>
<td>90</td>
<td>4.21</td>
<td>4.5</td>
<td>.62</td>
<td>-2.49</td>
<td>9.07</td>
<td>4.08</td>
</tr>
<tr>
<td>Resistance</td>
<td>90</td>
<td>2.93</td>
<td>2.6</td>
<td>.53</td>
<td>.21</td>
<td>.12</td>
<td>2.81</td>
</tr>
<tr>
<td>Ability Grouping</td>
<td>90</td>
<td>3.13</td>
<td>3.0</td>
<td>.87</td>
<td>-.04</td>
<td>-.65</td>
<td>2.49</td>
</tr>
<tr>
<td>Total Score</td>
<td>90</td>
<td>3.43</td>
<td>3.6</td>
<td>.62</td>
<td>-.18</td>
<td>.16</td>
<td>3.38</td>
</tr>
</tbody>
</table>

To measure the distribution of the data, the skewness (a measure of symmetry,
or more precisely, the lack of symmetry) and the kurtosis (a measure of whether the
data are peaked or flat relative to a normal distribution) were used (Pearson, 1895;
Wright & Herrington, 2011). According to the classical guidelines provided by
Bulmer (1967), the values of skewness and kurtosis between 0 and 0.50, or between
0 and -0.50, are indicative of approximately normal distributions; the values between
0.50 and 1.00, or -0.50 and -1.00, are indicative of moderate non-normality; and the
values greater than 1.00 or less than -1.00 are indicative of high non-normality. In
examining skewness and kurtosis, histograms were constructed for the three sub-
scales (see Appendix C). The distributions of all sub-scales were either normal or
moderate normal. Sub-scales are presented below, along with sample statements obtained from the Gagné and Nadeau’s (1991) questionnaire.

4.3.1.1 **Sub-scale 1: Needs of the Gifted Students**

Most participants were highly positive on this sub-scale, agreeing to statements such as: “Our schools should offer special educational services for the gifted”; “The gifted need special attention in order to fully develop their talents”; and “The specific educational needs of the gifted are too often ignored in our schools”. The high responses, indicate a highly positive attitude toward the needs of the gifted (M=4.21, SD=.62). It appears that these positive attitudes may be influenced by the participants’ culture. Giftedness is perceived in Saudi Arabia as a gift from God that needs to be developed and maintained (see Section 1.3.6).

4.3.1.2 **Sub-scale 2: Resistance to differentiation based on Personal Belief and Opinions about Educational Priorities**

The second sub-scale was used to examine the participants’ ideological opposition to differentiation for the gifted, including: objections based on personal belief such as “Average children are the major resource of our society; so, they should be the focus of our attention”; and “Children with disabilities have the most need of special educational services”. The majority of the participants held ambivalent attitudes toward special service for the gifted, especially when they are compared to normal or disabled students (M=2.93, SD=.53). It appears there is resistance to providing the gifted with special services, in comparison to other groups, because of elitism or the needs of other students with disabilities.

4.3.1.3 **Sub-scale 3: Ability Grouping**

The Ability Grouping sub-scale explored attitudes toward special classes and schools. The sub-scale statements being rated were, for example: “The best way to meet the needs of the gifted is to put them in special classes”; and “When the gifted are put in special classes, the other children feel devalued”. The findings indicate that most future special education teachers hold ambivalent attitudes toward ability grouping (M=3.13, SD=.87). The relatively high SD =87 may indicate that the participants held diverse views about it which may indicate limited knowledge of such strategy as it is currently unavailable in the Saudi school system (Al Qarni, 2010). As argued by Al Qarni (2010), “ability grouping remains a neglected area in
the teaching of the gifted children in Saudi Arabia, and does not exist although a few efforts to introduce this concept may occur at individual centre level” (p. 67).

4.4 INFERENTIAL ANALYSIS

Inferential analysis was used in this study to answer Research Question Two (Section 4.4.1) and Research Question Three (Section 4.4.2).

4.4.1 Research Question Two: Effect of Demographics

The Spearman matrix and a multiple linear regression analysis (George & Mallery, 2009) were used to address the second research question: “What factors predict the attitudes of future special education teachers toward gifted education (i.e., age, the participants’ hometown, level of their parents’ education; and contact with giftedness)?”

The analysis examined the relationships between the independent demographic variables (see above) and the participants’ attitudes in regard to each of the three sub-scales: (a) Need and Support, (b) Resistance to differentiation, and (c) Ability Grouping. The responses were dummy-coded as nominal data with two levels (0, and 1).

Spearman correlation is, basically, a special case of the Pearson product-moment coefficient, in which the data are converted into ranks before the coefficients are calculated (Conover, 1999). It differs from Pearson’s correlation only in that the calculations are made after the numbers are converted to ranks (Howell, 2004). For example, the smallest value on $X$ becomes a rank of 1 when converting to ranks. Pearson’s correlation also obtained similar significance results. The following table presents correlation matrix of demographic and sub-scales.
Table 4.3

*Correlation Matrix of Demographic and Sub-scales*

<table>
<thead>
<tr>
<th>Variables</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>6</th>
<th>7</th>
<th>8</th>
<th>9</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Age</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 Hometown</td>
<td></td>
<td>-.037</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3 Father's Ed. Level</td>
<td></td>
<td>-.122</td>
<td>-.043</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>4 Mother's Ed. Level</td>
<td></td>
<td>-.010</td>
<td>-.186</td>
<td>.405**</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>5 I'm Gifted</td>
<td></td>
<td>.000</td>
<td>.119</td>
<td>-.004</td>
<td>-.143</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>6 Gifted Friends</td>
<td></td>
<td>-.018</td>
<td>.120</td>
<td>-.045</td>
<td>-.183</td>
<td>.359**</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>7 Need</td>
<td></td>
<td>-.207</td>
<td>-.235*</td>
<td>.090</td>
<td>.072</td>
<td>.082</td>
<td>-.045</td>
<td></td>
<td></td>
</tr>
<tr>
<td>8 Resistance</td>
<td></td>
<td>.172</td>
<td>.272**</td>
<td>-.074</td>
<td>-.182</td>
<td>.260*</td>
<td>.279**</td>
<td>.102</td>
<td></td>
</tr>
<tr>
<td>9 Ability grouping</td>
<td></td>
<td>-.009</td>
<td>-.033</td>
<td>.245*</td>
<td>-.023</td>
<td>.107</td>
<td>.064</td>
<td>.243*</td>
<td>.236*</td>
</tr>
</tbody>
</table>

*. Correlation is significant at the 0.05 level (2-tailed).

**Correlation is significant at the 0.01 level (2-tailed).
The results for the three sub-scales variables (Needs and Support, Resistance, and Ability Grouping) and the demographic variables are presented in Table 4.3 (the correlation matrix of demographic questions and the three sub-scales). The “Needs and Support” sub-scale was significantly correlated with both “Participants’ Hometown” ($\rho = .235, p = .026$), and the “Ability Grouping” Sub-scale ($\rho = .243, p = .021$). The sub-scale “Resistance” was significantly correlated with three variables: “Participants’ Hometown” ($\rho = .272, p = .009$), the “Ability Grouping” Sub-scale ($\rho = .236, p = .025$), the “I’m Gifted” variable at ($\rho = .260, p = .014$), and with “Having Gifted Friend” variable ($\rho = .279, p = .008$). The “Father’s Level of Education” variable was significantly correlated with both the “Mother’s Level of Education” ($\rho = .405, p = .000$), and the sub-scale “Ability Grouping” ($\rho = .245, p = .020$) variable. Finally, the variable “I’m Gifted” was significantly correlated with the variable “Having Gifted Friends” ($\rho = .359, p = .001$).

4.4.1.1 A Multiple Regression Analysis

A multiple linear regression analysis, performed to address the second research question, was used to identify the best combination of predictors (independent variables) of the dependent variables (Mertler & Vannatta, 2005). It was also used to investigate the correlation between the multi independents variables (age, the participants’ hometown, level of their parents’ education, and contact with giftedness) and the one dependent variable (i.e. the three-sub-scales from the “Opinions about the Gifted and their Education” questionnaire. Further, multiple regression was used to identify whether or not a significant prediction ($p < .05$) equation existed and the direction of the relationships. The three sub-scales are discussed separately below.

4.4.1.1.1 Needs and Support

The null hypothesis to be tested in this analysis is:

$H_0$: Demographic variables will not account for significant amounts of variance in special education future teachers’ attitudes toward the needs of the gifted students.
The alternative hypothesis is:

\[ H_1: \text{Demographic variables will account for significant amounts of variance in special education future teachers' attitudes toward the needs of the gifted students.} \]

A multiple regression examined the proposed theoretical model involving the attitudes of the participants toward the needs of the gifted and the demographic variables. The regression equation was not significant (F (6, 80) = 1.856, p<.099), with \( R^2 \) of .122. However, a significant regression equation identified both age and participant’s hometown as independent variables that are potential predictors of the sub-scale “needs and support” (See Table 4.4). The result indicated that marginal differences exist between the younger age groups, with the 25 years and above at p-value of .05. In addition, participants from an urban area were likely to have positive attitudes towards the needs of the gifted (M=4.27, SD=.50). As a consequence the null hypothesis is rejected.

Table 4.4

*Multiple Regression Analysis (Needs and Support)*

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
<th>Beta</th>
<th>Standered error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-3.647</td>
<td>-.208</td>
<td>1.238</td>
<td>-1.969</td>
<td>.052</td>
</tr>
<tr>
<td>Hometown</td>
<td>-3.262</td>
<td>-.244</td>
<td>1.852</td>
<td>-2.271</td>
<td>.026</td>
</tr>
<tr>
<td>Father's Ed. Level</td>
<td>.564</td>
<td>.052</td>
<td>1.437</td>
<td>.451</td>
<td>.653</td>
</tr>
<tr>
<td>I'm gifted</td>
<td>1.778</td>
<td>.150</td>
<td>1.730</td>
<td>1.319</td>
<td>.191</td>
</tr>
<tr>
<td>Gifted friends</td>
<td>-.766</td>
<td>-.076</td>
<td>1.348</td>
<td>-.655</td>
<td>.515</td>
</tr>
</tbody>
</table>
4.4.1.1.2 Resistance toward Differentiation

The null hypothesis to be tested in this analysis is:

$H_0$: Demographic variables will not account for significant amounts of variance in special education future teachers’ attitudes toward differentiation.

The alternative hypothesis is:

$H_1$: Demographic variables will account for significant amounts of variance in special education future teachers’ attitudes toward differentiation.

A multiple linear regression examined the proposed theoretical model involving participants’ attitudes toward differentiation and the demographic independent variables. A significant regression equation was found (F (6, 80) = 3.305, p<.006), with R² of .199. An inspection of individual predictors revealed that “Hometown” when is coded as urban= 0, rural =1 (Beta = .241, p < .021) is a possible predictor of resistance toward differentiation.

An independent sample t-test showed a significant difference in the mean scores for rural (M=3.25, SD=.37) and urban (M=2.86, SD=.53) conditions; t (88) = -2.65, p = .009. Participants from Rural areas were likely to show resistance toward differentiation.

Table 4.5

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
<th>Beta</th>
<th>Standard error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>-3.647</td>
<td>.181</td>
<td>1.885</td>
<td>1.794</td>
<td>.077</td>
</tr>
<tr>
<td>Hometown</td>
<td>3.380</td>
<td>.241</td>
<td>1.462</td>
<td>2.353</td>
<td>.021</td>
</tr>
<tr>
<td>Father's Ed. Level</td>
<td>3.440</td>
<td>-.043</td>
<td>1.273</td>
<td>-.389</td>
<td>.698</td>
</tr>
<tr>
<td>Mother's Ed. Level</td>
<td>-.496</td>
<td>.061</td>
<td>1.760</td>
<td>.538</td>
<td>.592</td>
</tr>
<tr>
<td>I'm gifted</td>
<td>.947</td>
<td>.176</td>
<td>1.372</td>
<td>1.620</td>
<td>.109</td>
</tr>
<tr>
<td>Gifted friends</td>
<td>2.222</td>
<td>.199</td>
<td>1.190</td>
<td>1.804</td>
<td>.075</td>
</tr>
</tbody>
</table>
4.4.1.3 Ability Grouping

The null hypothesis to be tested in this analysis is:

\( H_0: \) Demographic variables will not account for significant amounts of variance in special education future teachers’ attitudes toward ability grouping.

The alternative hypothesis is:

\( H_1: \) Demographic variables will account for significant amounts of variance in special education future teachers’ attitudes toward ability grouping.

A multiple linear regression examined the proposed theoretical model involving participants’ attitudes toward special ability grouping for the gifted, based on the demographic independent variables. No significant regression equation was found for this sub-scale \((F (98,962) = 1.365, p<.239)\) with an \(R^2\) of .093. However, the independent variable “Father’s education” was identified as a possible predictor of the sub-scale “Ability”. That is, most participants, who had a father with a graduate degree, were likely to have positive attitudes towards ability grouping for the gifted \((M=3.44, SD=.86)\).

Table 4.6
Multiple Regression Analysis (Ability Grouping)

<table>
<thead>
<tr>
<th>Independent variables</th>
<th>B</th>
<th>Beta</th>
<th>Standered error</th>
<th>t</th>
<th>Sig</th>
</tr>
</thead>
<tbody>
<tr>
<td>Age</td>
<td>.343</td>
<td>.028</td>
<td>1.300</td>
<td>.264</td>
<td>.792</td>
</tr>
<tr>
<td>Hometown</td>
<td>-.478</td>
<td>-.052</td>
<td>1.008</td>
<td>-.474</td>
<td>.637</td>
</tr>
<tr>
<td>Father's Ed. Level</td>
<td>2.283</td>
<td>.302</td>
<td>.878</td>
<td>2.600</td>
<td>.011</td>
</tr>
<tr>
<td>Mother's Ed. Level</td>
<td>-1.711</td>
<td>-.169</td>
<td>1.214</td>
<td>-1.409</td>
<td>.163</td>
</tr>
<tr>
<td>I'm gifted</td>
<td>.799</td>
<td>.098</td>
<td>.946</td>
<td>.844</td>
<td>.401</td>
</tr>
<tr>
<td>Gifted friends</td>
<td>-.002</td>
<td>.000</td>
<td>.821</td>
<td>-.002</td>
<td>.998</td>
</tr>
</tbody>
</table>
4.4.2 Research Question Three: Impact of the Course about Giftedness on Attitudes

This section presents the extent to which participating in a university course about giftedness influences the attitudes of special education future teachers. The following sections address the Third Research Question quantitatively for the reliable three sub-scales (Needs, Resistance, and Ability Grouping) (Section 4.4.2.1), and the other sub-scales that were not identified as reliable were only analysed qualitatively (Section 4.4.2.2).

4.4.2.1 Quantitative Analysis

The third research question (To what extent does participating in a university course about giftedness influence the attitudes of special education future teachers regarding special services for the gifted?) was examined using Gagné and Nadeau’s (1991) questionnaire. The questionnaire was distributed immediately before the start of the course to all participants (3rd-year future teachers enrolled in a special education major in the Department of Special Education) who were enrolled in a formal course about giftedness (Introduction to Giftedness and Creativity) at a Saudi Arabian university, in the Spring semester, 2010, with 90 usable questionnaires returned. They were also presented with the same questionnaire in the last week of a 16-week-long gifted course to examine whether the course had any impact on their attitudes toward the gifted.

The questionnaire explored their attitudes toward gifted students and their education. Answers were chosen from the same set of alternatives: “Strongly Agree” to “Strongly Disagree”. A Paired Samples t-test was used to examine whether the participants’ attitudes were significantly different after attending the giftedness course. The Paired Samples t-test was determined to be the best assessment when investigating two interval/ratio variables from the same participants, who are assessed exactly the same way (Meyers et al., 2006). The test was used to compare the scores of the pre- and post-tests and to identify the size of the differences (the effect-size estimate is reported), and whether the differences were meaningful. The APA Publication Manual (American Psychological Association, 2001, p. 25) defined the effect-size estimates as values that characterise “the magnitude of an effect or the strength of a relationship”. A number of generally used indices of effect size, such as Cohen's $d$ or $\eta^2$ were used. Indices, presented by Cohen (1988) for interpreting
Cohen's \( d \), indicate that 0.2 represents a small effect, 0.5 equates to a medium effect, and effects larger than 0.8 signifies a large effect (Cohen, 1988). The current results are presented in Table 4.7.

<table>
<thead>
<tr>
<th>Sub-scales</th>
<th>Groups</th>
<th>Means</th>
<th>Std.Dev</th>
<th>t</th>
<th>Df</th>
<th>d</th>
<th>( p )-value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Needs and support</td>
<td>Pre-test (n=90)</td>
<td>4.21</td>
<td>.63</td>
<td>1.07</td>
<td>177</td>
<td>-0.15</td>
<td>.286</td>
</tr>
<tr>
<td></td>
<td>Post-test (n=89)</td>
<td>4.10</td>
<td>.62</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Resistance</td>
<td>Pre-test (n=90)</td>
<td>2.93</td>
<td>.53</td>
<td>2.50</td>
<td>177</td>
<td>-0.37</td>
<td>.013</td>
</tr>
<tr>
<td></td>
<td>Post-test (n=89)</td>
<td>2.71</td>
<td>.60</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Ability grouping</td>
<td>Pre-test (n=90)</td>
<td>3.13</td>
<td>.87</td>
<td>4.38</td>
<td>177</td>
<td>0.65</td>
<td>.000</td>
</tr>
<tr>
<td></td>
<td>Post-test (n=89)</td>
<td>3.63</td>
<td>.65</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

A paired-sample t-test compared the pre-test and post-test scores for the Needs and Support, Resistance, and Ability Grouping sub-scales using the .05 alpha levels. There was no significant difference in the scores (\( t(177)= 1.07, \ p = .286 \)) for the sub-scale *Needs and Support* for the pre-test (M=4.21, SD=.63) and post-test (M=4.10, SD=.62) conditions. The effect size results showed that the attitudes of the participants did not change in relation to the needs of the gifted.

The paired-sample t-test revealed meaningful differences between the pre-test and post-test (\( t(177)= 2.50, \ p = .013 \)) in relation to the sub-scale *Resistance* pre-test (M=2.93, SD=.53) and post-test (M=2.71, SD=.60) conditions. The results suggest that the means decreased in a meaningfully manner. However, the effect size showed that the difference was small (see Table 4.7).

Similarly, the paired-sample t-test revealed meaningful differences between the pre-test and post-test in relation to the sub-scale Ability grouping. The post-test score conditions (M=3.63, SD=.65) were higher than the score conditions from the pre-test.
The paired-sample t-test revealed a meaningful difference $t(177) = 4.38$, $p < 0.000$, with the effect size indicating that the difference was at a medium level (see Table 4.7). These results indicate that the attitudes of the majority of future special education teachers were meaningfully improved at the end of the course in relation to ability grouping opportunities.

The next section provides qualitative evidence that addresses the Research Question Three.

### 4.4.2.2 Qualitative Analysis

Gagné and Nadeau’s (1991) sub-scales were examined qualitatively in relation to the third research question (To what extent does participating in a course about giftedness influence the attitudes of special education future teachers regarding special services for the gifted?)

Determining how strongly views were held, frequency counts and percentages were used. All frequency counts and percentages were written in the positive so that “agreement” equated to a positive response. To make the positive and negative trends more obvious, the “strongly agree” and “agree” responses were combined into one evaluation point.

The analysis of the comments, recorded during the semi-structured interviews, revealed the themes and patterns and provided a deeper explanation of the observed frequency distributions, as well as a deeper understanding of the participants’ attitudes in regard to each theme. The priori themes guide the analysis of the following sub-scales: Needs and Support, Resistance toward differentiation, Ability grouping, Social Value, Acceleration, Rejection of the gifted by others. The emergence themes were compared and discussed individually at the end of each phase (pre and post). The pre-interview responses were coded as (PRC), while the post-interview responses were coded as (POC), followed by the interviewees identifiable numbers. Each sub-scale is discussed separately for the before and after participation in the course.

### 4.4.2.2.1 The sub-scale: Needs and Support

The “Needs and Support” items evaluated the participants’ attitudes in relation to the needs of gifted students, as well as the participants’ support for special services. Items under this sub-scale are discussed qualitatively (1, 9, 11, 14, 15, 24,
30 and 32), with following Table 4.8 showing the items and the participants’ agreement percentages. The reader is reminded that these scales failed to provide satisfactory levels of reliability and hence a statistical analysis was not deemed appropriate (See p. 97).

Table 4.8

*Needs and Support*

<table>
<thead>
<tr>
<th>Items</th>
<th>Pre %</th>
<th>Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Our schools should offer special educational services for the gifted.</td>
<td>96.7</td>
<td>95.3</td>
</tr>
<tr>
<td>9. Gifted children are often bored in school.</td>
<td>67.8</td>
<td>69.7</td>
</tr>
<tr>
<td>11. The gifted waste their time in regular classes.</td>
<td>68.8</td>
<td>75</td>
</tr>
<tr>
<td>14. The specific educational needs of the gifted are too often ignored in our schools.</td>
<td>87.6</td>
<td>80.7</td>
</tr>
<tr>
<td>15. The gifted need special attention in order to fully develop their talents.</td>
<td>95.5</td>
<td>87.6</td>
</tr>
<tr>
<td>24. In order to progress, a society must develop the talents of gifted individuals to a maximum.</td>
<td>97.8</td>
<td>87.5</td>
</tr>
<tr>
<td>30. Since we invest supplementary funds for children with disabilities, we should do the same for the gifted.</td>
<td>85.5</td>
<td>81.8</td>
</tr>
<tr>
<td>32. The regular school program stifles the intellectual curiosity of gifted children.</td>
<td>84.5</td>
<td>79.7</td>
</tr>
</tbody>
</table>

The quantitative analysis (Section 4.4.2.1) shows that the participants’ attitudes did not change on this sub-scale following their attendance of the course. The qualitative analysis extended this sub-scale by interrogating the interview data for themes that aligned with the construct underpinning the sub-scale.

The qualitative results showed that most participants were highly positive for the sub-scale (Needs and Support) before and after participating in the course. Further, most participants recognised the needs of the gifted for special services. This positive attitude, according to the Personal Knowledge Theory (Polanyi, 1966), may be attributed to cultural knowledge and information. The theory argues that cultural knowledge and information are components of implicit knowledge, which improves
attitudes towards a phenomenon (Ajzen & Fishbein, 1994; Polanyi, 1966). For example, some special services for the gifted were mentioned by a number of participants, which indicates more information was gained by participants “I support special programs for the gifted like group abilities and special classes” (POC12). One participant also mentioned the identification of the gifted as the first and most important step in meeting the needs of the gifted “I see that the greater significance lies in the identification of the gifted and then provide the appropriate environment” (POC22). Thus, the participants were more aware of the needs of the gifted.

The Saudi culture generally values giftedness, therefore, as members of that society, the future teachers were influenced by public attitudes. One participant explained that “Gifted students are productive resources in our society, so their needs must be met and we should provide them with special services” (PRC8). This statement is representative of the value and support of the gifted by the Saudi culture. Each item from this sub-scale is discussed separately in terms of before and after participation in the course.

Item 1 (Pre-test), Special Educational Service for the Gifted: The majority of participants (97.7%) were positive in relation to providing the gifted with special services, believing that schools should provide special services for the gifted. One participant expressed his interest in special services for the gifted: “We have no special programs for gifted children in regular schools...they supposed to have programs and special classes, but I see that there is no interest in the gifted” (PRC22). This comment is critical as it links the lack of special services for the gifted in Saudi schools with the lack of schools’ interests (attitudes) of gifted students.

Item 1 (Post-test), Special Educational Service for the Gifted: After participating in the course, most participants (95.3%) remained supportive of the needs of the gifted for special education. This outcome was expected as the participants began with highly positive attitudes toward the needs and support of the gifted. One participant, for example, stated “my attitudes were positive toward the needs of the gifted even before the course” (POC58). However, the course provides more information about the needs of the gifted, which is aligned with Saudi cultural support for the gifted. As one participant explained, “the course has somewhat showed me how important is to meet the needs of the gifted students and how they
can be met” (POC22). Another participant stated: “Gifted students need special services just as the students with disabilities, as a future teacher, I’ll try my best to provide gifted students with special programs such as enrichment, or at least nominate them to the gifted centres” (POC30). The course was designed to introduce the participants to the needs of the gifted in Saudi schools and the current support available (see Section 3.4). Introducing these topics appears to have made the participants more aware of the needs of the gifted.

Item 9 (Pre-test), Boredom: The majority of the participants (67.8%) acknowledged that gifted students became bored in regular school lessons, where they may experience too much repetition and not enough in-depth activities. For example, one participant commented on the gifted characteristics, including being bored: “the gifted can be known by his…boredom of regular curriculum” (PRC27). Another participant expressed this issue of boredom: “If they do not have a passion for the study because of their teachers’ ignorance and not fulfilling their desires, this often leads to the gifted being bored” (PRC58). Ignorance of the needs of gifted students was also mentioned by another participant as a reason being bored in classrooms; “One of my friends has been neglected in the early stages of his study, despite his intelligence, especially in computer science, but when he joined the Military College he started to show a talent for the computer and he won a first award in that college” (PRC30).

The boredom was seen as a typical experience of gifted students in the regular curriculum where they often experience repetition of work and disregard for their learning needs. The data show that the past experiences contributed to the formation of participants’ beliefs (implicit knowledge) about the gifted being bored. Thus, knowing a gifted student was a stimulus for supporting special educational services to overcome the gifted feelings of boredom.

Item 9 (Post-test), Boredom: The positive attitudes of most participants (69.7%) remained unchanged following their participation in the course. Some interviewed participants recognised the importance of the course as a way of introducing the difficulties faced by the gifted in regular classroom lessons, including being overlooked or unchallenged. One interviewee said: “I don’t see much of what was given in the lecture being implemented in our schools, so I think the gifted will remain unchallenged and bored” (POC8). Significantly, some participants linked
what was offered in the course to their experiences in school. Hence, experience, especially during schooling years, was found to be essential in shaping the participants’ beliefs and influencing their attitudes (Polanyi, 1966). The topic on the problems that the gifted face in schools (Section 3.4) introduced the participants to these difficulties and, in the long run, may make them more aware of the problems.

Item 11 (Pre-test), Gifted and Wasting Time in Regular Classrooms: Around 68.8% of the participants agreed that the gifted waste their time in regular classrooms. This finding indicates that the majority of participants support special educational services as a way of meeting the needs of the gifted students, which are not being met in the regular classroom lessons. One participant criticised the accepted practice of retaining gifted students in regular classrooms; “Yes, they need special care, because if left in the regular classrooms, talent will disappear, but when care and support are provided talent will appear and flourish” (PRC30).

However, other participants (around 30%) perceived that gifted students do not waste their time in regular classrooms. They perceived that the gifted can progress even in an unsupportive school environment. For example, one participant noted: “if I have gifted students in my ordinary class, I’ll focus more on the ordinary students because I know gifted students have high mental abilities and can make it on their own” (PRC22). This statement suggests the participant assumes that academic potential of the gifted can be spontaneously developed. It also seems that the participants are unfamiliar with information models, such as Gagné’s (2009) DMGT, which argue that support or intervention is needed to develop gifted potential. Such attitudes are, to a certain extent, expected as they have yet to be exposed to information about DMGT and they share the widely held stereotypical view of the gifted.

Item 11 (Post-test), Gifted and Wasting Time in Regular Classrooms: After the course about giftedness was delivered, the percentage of understanding of the participant had increased slightly (8%); (75%) now believed that the gifted wasted their time in regular classes. This increase can be attributed, in part, to the topic related to problems facing gifted students in regular classrooms in Saudi Arabia and worldwide (Chapter VIII, from the Course Notes). As one participant explained: “I learned that gifted students may hide their talents because of their classmates, so it is better for the gifted not to be taught in regular classrooms, but to be taken to special
schools where they can meet likeminded students and where their needs can be met” (POC30). Thus, the participants verbalised more reasons for supporting the special classes and schools as a way of the gifted having their needs met. Hence, more information was gained by participation in the course.

Items 14 (Pre-test), Ignorance of Gifted Needs: Most of the participants (87.6%) acknowledged that the current schools ignored existing strategies to meet the special needs of gifted students (Item 14, “The specific educational needs of the gifted are too often ignored in our schools”). One participant stated: "They should have some special services but we see the opposite" (PRC70), that is, no support was being provided for gifted students. He went further and suggested how gifted students’ needs should be met; “gifted students need specialised teachers and we need to develop awareness and understanding of giftedness in our society” (PRC70). His response implied recognition that attitudes were deeply seated in Saudi society’s perceptions. In addition, his comments raise two issues: teacher’s expertise to teach gifted students, and community awareness or perceptions.

These two issues were also referred to by other participants; “Teachers should be prepared sufficiently in gifted education in order to be able to deal with gifted students” (PRC22); and “I hope that in future there will be awareness programs for parents and the community about gifted people” (PRC27). One participant expanded on his response and linked attitudes to information; “In my opinion, providing a course about giftedness to future teachers will help to change their attitudes so that they are able to recognise the gifted and their characteristics” (PRC30). Thus, most participants acknowledged the ignorance, in schools, of the provision of strategies to meet the special needs of gifted students. These conclusions appear to be based on the participants’ previous experience as students. They also emphasised the importance of teachers’ knowledge in meeting the needs of gifted students.

Items 14 (Post-test), Ignorance of Gifted Needs: Responses showed that around 80% of the participants agreed that the needs of the gifted were ignored in the regular schools. Chapter VI in the course describes the lack of services provided for gifted students, particularly in Saudi schools. According to one participant: “we see nothing being provided for the gifted in Saudi schools” (POC22). Such experiences may encourage the participants to insist upon the provision of special services for the gifted. The participants also became more aware of the difficulties that teachers have
in identifying gifted students. One participant revealed that, “I think the biggest challenge for teachers is how to identify the gifted” (POC22). His response reflects some of the topics covered in the course (Chapter VI), which aimed at introducing the future teachers to a number of identification procedures of the gifted, as well exposing the future teachers to problems faced by the gifted, such as being overlooked or being under-identified.

Item 24 (Pre-test), Society and the Gifted: The majority of the participants (97.8%) recognised that the needs of the gifted should be developed for the benefit of the society, agreeing with the following statement: “In order to progress, a society must develop the talents of gifted individuals to a maximum”. This result was an indication of the Saudi supportive culture and its valuing of the gifted’s roles in society. One participant stated: “Gifted students are productive resources in our society, so their needs must be met and we should provide them with special services” (PRC8). The response links cultural support about the value of gifted children in our society, which may help form positive attitudes toward the needs of the gifted.

Item 24 (Post-test), Society and the Gifted: Most participants began with strong positive attitudes toward the value of the gifted in Saudi society; the result (approximately 87%) retained much the same attitudes at the end of the course. The participants recognised the role of the gifted in advancing Saudi society, a society which generally values giftedness. One participant explained: “Gifted students play an essential role in our society, so their needs must be met and we should provide them with special services” (POC8). This comment is similar to what the course was intended to introduce (Chapter I). In addition, as members of the Saudi society; the participants were influenced by public attitudes.

In conclusion, most of the future special education teachers acknowledged the needs of the gifted for special attention, as well as the funds needed to provide the attention to overcome their boredom and to meet their curiosity. The participants also supported special educational services for the gifted, that is, more services other than what is already provided in the regular school classroom. Further, the attitudes started out as positive and remained unchanged. This outcome may be related to either cultural support or the participants’ schooling experience. Nevertheless, the
evidence showed that the participants increased their knowledge about the needs and characteristics of gifted students through attending the course.

4.4.2.2.2 The sub-scale: Resistance toward Differentiation

The sub-scale resistance to gifted education category was assessed through the third question (What are the attitudes of future teachers in special education toward differentiation before and after participating in the course?). The category reflects opinions based on “personal belief and opinions about educational priorities”. In Gagné’s (1983) original investigation, respondents expressed their attitudes toward why gifted students should not be provided for special support. These respondents saw differentiation as being elitist or that the society had a greater obligation to support students with disabilities. The current questions probed the extent to which similar views were held by this cohort of Saudi future special education teachers. The participants were surveyed to identify their level of resistance or opposition to differentiation, because of the fear of elitism or priorities of other students. Table 4.9 shows the results for items 27 and 12 of this sub-scale and their percentages.

Table 4.9
Resistance to Differentiation

<table>
<thead>
<tr>
<th>Items</th>
<th>Pre %</th>
<th>Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td>27. Average children are the major resource of our society; so, they should be the focus of our attention.</td>
<td>73.4</td>
<td>65.2</td>
</tr>
<tr>
<td>12. We have a greater moral responsibility to give special help to children with disability than to gifted children.</td>
<td>60.7</td>
<td>50.5</td>
</tr>
</tbody>
</table>

Item 27 (Pre-test), TheGifted Compared to the Average: Items 27 sought to relate the participants’ attitudes to the statement: “Average children are the major resource of our society; so, they should the focus of our attention”. The majority of the participants (73.4 %) saw average students as the main resource for the Saudi society. The result may also indicate their resistance toward differentiation for the gifted in comparison to average students. Participants commented that, “all students will contribute to society” (PRC8), and “everyone is gifted at something and they can help in various ways” (PRC12). These comments imply resistance toward differentiation, possibly due to concerns about equity.
Another possibility is that the participants believed the gifted were only a minority of the population, for example, “...their number is quite small in comparison to the rest of the students, so I don’t think they are the major resource of any society” (PRC54). This proportional comparison, between the gifted students and average students, identifies the average students as the majority of any population. It appears that the variation in the participants’ answers result from either concerns about equity, or a possible misreading of the item.

Item 27 (Post-test), The Gifted Compared to the Average: The analysis of the post-test data for Item 27 revealed that most participants were still slightly resistant towards the value of gifted students to Saudi society, when compared to the average students. For example, the result of the following item, “Average children are the major resource of our society; so, they should be the focus of our attention”, shows that the percentage fell slightly from 73.4% (pre-test) to 65.2% (post-test). Thus, there was a slight improvement in, or a lessening in resistance toward, the gifted when compared to the average students. The change may be due to the information, given in the course, about the contribution made by, and the importance of, the gifted to society (See Section 3.4). In referring to the Item 27 statement, one participant stated: “they [the gifted] help societies in many ways, for example science and technology”. In response to the question, “Was that something you learned from the course?” the answer was...Yes, it [the course] showed me some examples of their benefits to our society” (POC8).

Item 12 (Pre-test), The Gifted Compared to the Disabled: The needs for special services for the gifted were compared to the needs of the disabled students in Item 12, “We have a greater moral responsibility to give special help to children with disability than to gifted children”. The result showed that more than half of the participants (60.7%) believed disabled students were more in need of special services than the gifted. It reflects the belief that the disabled have greater needs because of the disadvantages resulting from their disabilities. For example, one response was that, “the gifted has the potential already, but the disabled is still disadvantaged” (PRC54). Another response argued, “Disabled students are more in need of care and programs because the gifted can develop their potential by themselves but the disabled cannot live and grow up without help” (PRC12).
One contributing factor for the participants’ knowledge and understanding of the needs of students with disabilities is their longer exposure to disabilities courses than courses about the needs of the gifted. Also, these participants had yet to attend their only course about giftedness. Further, previous research identified that familiarity with people with disabilities was an important factor influencing positive attitudes toward the disabled (Genskow & Marglione, 1965; Praisner, 2003; Preininger, 1968; Siegel & Moore, 1994). Such attitudes could also have been reinforced by the Saudi government’s interest in disability education from the early 1960s (AL-Muslat, 1994), while gifted education policies and practices are of recent origin (Batterjee, 2010).

Item 12 (Post-test), The Gifted Compared to the Disabled: In the post-test for Item 12, “We have a greater moral responsibility to give special help to children with disability than to gifted children”, after the course, participants’ attitudes had improved by almost 10% to be more in favour of the gifted. The percentage decreased, from 60% to 50.5%, was not wholly unexpected this was their only course about giftedness; the remaining courses tended to focus on services for students with disabilities. One participant expressed this change in how he viewed the gifted and those with disabilities before and after the course “…and I thought he [the gifted] is a person with a disability because it falls under special education, but it became clear to me after the course the gifted could be a normal person but talented in a particular area and needs special care” (POC12). The current findings are congruent with Begin and Gagné’s (1994b) literature review, which found that participation in a gifted program was associated with more knowledge about, and positive attitudes toward, the gifted.

Nevertheless, around half of the participants were still in favour of preferential support for the disabled. For example, some viewed disabled students as most in need of special educational services; "…the disabled is in more need for the services and I tend to support the disabled more because the difficulties they have not like the gifted who has the potential already" (POC58), and “[the] disabled indeed, because they need more attention than the gifted” (POC22). Such statements indicate that the participants would give preference to supporting disabled students with special services because of the disadvantages they face. In contrast, the gifted were seen as
having ‘the potential already, but the disabled is still in need for the services because he/she has disadvantages that need attention and services’ (POC54).

Further, some participants maintained their earlier attitudes. Hence, the course did not appear to challenge or change their perceptions in relation to the disabled’s needs. This resistance to change can be explained, in part, by the argument that they see themselves as specialised in disabilities, and not specialised in giftedness. For example, as they are studying only one specialist gifted course in a special education program. This aspect was emphasised by one participant: “I think one course [the gifted course] is enough for me as it is not related to my area of expertise, disabilities” (POC58). Additionally, they probably come to the course with a strong view and compassion about disabilities and, consequently, this view is hard to change by superficial learning acquired through attendance at only one course about giftedness.

Overall, the majority of the participants showed resistance to differentiation for the gifted when compared to their wish to support for other groups, specifically the disabled. The disabled were the preferred group requiring support, rather than the gifted. Additionally, the average students were seen as the major resource for Saudi society.

Two related subcategories were identified from the semi-structured interviews. The first subcategory related to teaching gifted students in mainstream classrooms, including future teachers’ self-efficacy. The second subcategory involved whether the gifted must achieve well in regular schools.

Special Services in Mainstream Classrooms (Pre-test): Five out of the eight interviewed participants expressed their concerns about teaching the gifted in mainstream classrooms. Three reasons were given for this view, namely: the desire to teach all students equitably; the notion that gifted students can do it on their own; and time pressures. One of the interviewees stated: “within the regular classrooms, I do not even try to make any discrimination in teaching my students, but treat them equally” (PRC54). This view implies that it is an injustice to provide gifted students with special practices and teaching strategies in mainstream classrooms. Further, it promotes the idea that teaching all students the same things will ensure equity between the students. Another participant argued an alternative perspective, that is, “providing a gifted student with special attention in the mainstream classrooms is not
fair for the others; all students should be given equal attention if they are studying within the regular classrooms” (PRC30).

The contention was that it is important to provide a fair amount of time and attention to all students, rather than give more time or attention to some groups of students, including the gifted, within mainstream classrooms. The results would be inequitable if special practices and teaching strategies were given to the gifted students. Such negative attitudes toward the needs of the gifted in mainstream classrooms have been identified elsewhere (Tomlinson et al., 1996; Whitmore, 1980). Indeed, these attitudes align with Gagné’s (1991) theme of ideological resistance to supporting the gifted.

The second reason for resisting the implementation of special practices and teaching strategies for gifted students within mainstream classrooms is that gifted students are autodidactic, which means have that they have the ability to develop their potential even without teachers’ help. One participant revealed their intended teaching strategy; “if I would have gifted students in my ordinary class, I’ll focus more on the ordinary students because I know gifted students have high mental abilities and can make it on their own” (PRC22). His overriding assumption was that the gifted student’s potential can be spontaneously developed. Such thinking shows that the participants had no information of models, such as Gagné’s (2009) DMT, which that illustrates that support or intervention is needed to develop potential. However, these attitudes are predictable, and to a certain extent expected at this stage, as the participants would not have been exposed to strategies such as DMGT and, furthermore, they would tend to share their society’s widely held stereotypical views of the gifted.

The third reason for resistance to supporting differentiation for the gifted was time pressure. For example, participants PRC70 and PRC30 stated that, “… because of the allocated time for the class, it is difficult to differentiate the curriculum for the gifted in the regular classrooms”, and “it is difficult for teachers to provide different activities for different abilities the students have in the allocated time of the class”, respectively. Indeed, all participants were concerned about the limited class time allocated for general teaching, which further inhibited teachers from meeting the needs of the gifted. Because of the increasing diversity in classrooms, the teachers tended to focus their efforts and attention on the majority of students, that is,
teaching the average students. As a consequence of such pressures, negative attitudes toward the gifted were developed (Tomlinson et al., 1996).

Special Services in Mainstream Classrooms (Post-test): After participating in the gifted course, only one participant agreed that gifted students should be given special services in mainstream classrooms. The other participants (n=5) remained highly concerned over equity issues or time constraints. Interesting, the third reason for resistance, that “gifted students can do it on their own”, was no longer of any concern. It was now understood that the gifted student could not achieve their potential on their own, in the regular classroom setting. It appears, therefore, that some topics covered in Chapter X (Course Notes, p. 20, Slides 23, 24 Week 10), which dealt with misconceptions held by educators in relation to gifted students and their education (such as gifted students are autodidactic). However, equity within the classroom and time pressures for teachers were still of concern to most participants. For example, participant POC54 revealed that “I do not support it because of the inequity issue”. As there were similar concerns about equity issues before the start of the course, it can be argued that the gifted course did not adequately challenge this concern. Hence, any future course should address the equity issues.

The issue of time pressure, however, caused conflict for a number of participants. As noted by participant POC12, "I agree with special services for the gifted such as special classes, but I don't agree it should be provided in the mainstream classrooms; teachers have no time to address different teaching activities for different abilities". This perspective appeared to be a potential reason for resisting special services for the gifted within regular classrooms. While the participants were concerned with helping gifted students to reach their potential, the course appears to have given them no real experiences or strategies for how to differentiate the curriculum effectively for the gifted in mainstream classrooms. However, more time was given to alternative strategies, such as special classes, schools and acceleration. For example, one participant commented that, “there were some programs as far as I remember but we studied more about acceleration and special schools” (POC58). The future special education teachers would benefit from having more hands-on experience in how to use differentiation strategies. These experiences would also help develop more positive attitudes towards differentiation. Such attention is important as differentiation involves adjusting the content, the learning processes,
and the types of products created. Further, the learning environment can be changed through developing different expectations, places to do their work, and assessment practices. Without sufficient guidance and exposure, future teachers will become overwhelmed by the goals to be achieved.

Overlaid on the need to discern the services required by the gifted are the participants’ strongly held attitudes towards equity. Differentiation within classrooms was seen as creating an inequitable learning environment. As one participant explained, “I don't support it [differentiation within regular classrooms], they can be taught with ordinary students during school’s hours and special services can be provided after school”. Further, when asked “why” he felt this way, participant POC54 replied: “I do not support it because of the inequity it may cause between the gifted and the other students”.

This attitude is of concern as it may prevent the gifted from essential strategies, such as Cluster Grouping. Cluster Grouping is a strategy where a group of three to six students, identified as gifted, and usually in the top 5% of ability in the grade level, are congregated in a mixed-ability classroom (Winebrenner & Devlin, 1998). In cluster classrooms, it is important that teachers have positive attitudes toward differentiation. Thus, to achieve these positive attitudes outcomes, it is crucial that future gifted courses address the concerns of equity and time pressure, as raised by participants, so that the gifted are better served within the regular classroom.

Self-efficacy Toward Differentiation: The interviews showed that most participants (n=4) had limited improvement in their self-efficacy in teaching gifted students. For example, participant POC12 stated: “I don’t think I’m able to teach them, they need a specialised teacher who is able to meet their individual needs”. His response indicated low self-efficacy, which may be attributed to the lack of real differentiation experience in the course. Another participant explained: “I wish the course had showed me practically how to differentiate the curriculum for the gifted” (POC54). The data indicate that the giftedness course had little, if any, positive impact on the participants’ self-efficacy in differentiation, even after completing the course.

Achievements of Gifted Students in Schools (Pre-test): In response to the interview question, “Can underachieving students be gifted?”, most participants (n=5) perceived that, to be gifted, one must achieve well at school work. Thus, they
saw school performance as a necessary criterion for giftedness. One comment expressed this perception succinctly; “gifted students are always superior in all school’s subjects” (PRC30). Another participant declared that the percentage of students being gifted and being an underachiever was “very low, because the gifted must show his/her talent to others in the class” (PRC8). These attitudes contradict the general belief that a portion of the underachiever population is gifted (Malik & Balda, 2006; Reis & McCoach, 2000), but align with the Saudi society’s rhetoric.

For example, a gifted child in Saudi culture is generally considered the “smart kid” or kids who achieved well in school. This definition is heavily dependent on the students’ subject scores (Alfahaid, 2002). When identifying the gifted, one participant answered: “I know if the child is gifted by looking at how smart he is in the class” (PRC8). Such understanding may have influenced the attitudes of the participants about the gifted and their achievement levels.

A few participants (n=3) acknowledged the possibility of underachievement among the gifted students. For example, participant PRC27 stated that: “not all the higher achievers are gifted; the gifted could be among the underachieving students and that because the unsupportive environment”. Another participant mentioned teachers as the reason for the gifted being underachievers: “the gifted can be an underachiever because of the lack of interest of their teachers toward them and not meeting their needs” (PRC58). Previous experience with the gifted was the main reason why participant PRC27 identified some gifted as underachieving. He has a father whom he believes is gifted, as well as a brother who works for the gifted centre in Saudi Arabia. Thus, previous experience with the gifted seems to correlate with the acknowledgment that underachievement can occur among the gifted population. This linkage was also identified earlier (Bangel et al., 2006; Megay-Nespoli, 2001).

Achievements of Gifted Students in Schools (Post-test): Following their attendance in the course, two participants (POC30 and POC8) showed an improvement in their attitudes and understanding that gifted students could be among the underachievers. For example, participant POC30 stated: “I learned from the course that gifted students may be bored in schools which makes them not pay attention to the subjects, resulting in low achievement”. This topic was discussed during the course (Course Notes: Chapter XI, p. 75 Slides 55, Week 4) (Section 3.4).
Another comment included a range of reasons why the gifted may underachieve. “This is possible if the teacher is weak in the subject or if there are circumstances like being bored or other external problems which make the gifted among the underachievers” (POC8). This topic was also presented in Chapter XI (Course Notes, p. 183, Slides 4, Week 11) (Section 3.4). However, the remaining four participants appeared to show no improvement in their attitudes toward gifted school achievement, as noted in the response from one participant: “I learned that gifted students have fast understanding and remembrance and that is all they need to achieve well in our schools” (POC12). The comment reinforces the notion that high mental ability and good memory capacity are characteristics of giftedness, which helps the gifted student to achieve well. This perception shows the impact of previous schooling experience on attitudes, where achievement in Saudi schools depends heavily on the remembrance of information.

The following section addresses Ability Grouping sub-scale qualitatively.

4.4.2.2.3 The sub-scale: Ability grouping

RQ3.C: What are the attitudes of future teachers in special education toward ability grouping before and after participating in the course?

The ability grouping category represents the participant’s attitudes toward grouping procedures for gifted students. One of the main gifted strategies is ability grouping, such as special school and classes. Table 4.10 shows the results for items 2, 6, and 20.

Table 4.10

<table>
<thead>
<tr>
<th>Ability Grouping</th>
<th>Items</th>
<th>Pre %</th>
<th>Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>2. The best way to meet the needs of the gifted is to put them in special classes.</td>
<td>56.6</td>
<td>73.8</td>
</tr>
<tr>
<td></td>
<td>6. When the gifted are put in special classes, the other children feel devalued.</td>
<td>58.9</td>
<td>28.8</td>
</tr>
<tr>
<td></td>
<td>20. Gifted children should be left in regular classes, since they serve as an intellectual stimulant for the other children.</td>
<td>60</td>
<td>30.3</td>
</tr>
</tbody>
</table>

Item 2 (Pre-test), Special Classes: As the above table illustrates, the majority of participants were unsure about the necessity for special gifted classes before the
delivery of the course. The pre-test responses to Item 2, “The best way to meet the needs of the gifted is to put them in special classes”, revealed ambivalent attitudes toward special classes. While almost 57% of the participants agreed with the need for special classes, as the best option to meet the needs of the gifted, just under half did not agree. This division shows that the participants had no exclusively positive attitude towards this type of strategy. One reason is their unfamiliarity with the strategy; special classes are not yet available in the Saudi school system (Al Qarni, 2010). As Al Qarni (2010) argues, “Ability grouping remains a neglected area in the teaching of the gifted children in Saudi Arabia, and does not exist although a few efforts to introduce this concept may occur at individual centre level” (p. 67).

Another negative attitude involves the belief that special classes for the gifted are elitist, and produce inequality in the school system. Participant PRC8 responded that: “I don’t agree with the special classes and schools because of equity-basis, they are better staying within regular classes and special attention can be provided after high school”. Participant PRC58 went further, stating that: “school’s activities are enough for the gifted, and they should stay in the mainstream classrooms in order to help ordinary students”. Thus, elitism and being helpful to ordinary students were two reasons why some future teachers’ objected to special classes for the gifted.

Item 2 (Post-test), Special Classes: Following the course, the majority of participants have recognised the importance of special classes for the gifted and they were more positive toward it than before. For Item 2 “The best way to meet the needs of the gifted is to put them in special classes”, the finding shows that the percentage was meaningfully increased from 56.6% to 73.8%, which indicates substantial improvement in their attitudes toward special classes for the gifted. The course was designed to introduce the participants to the importance of special classes for the gifted as a way to meeting their needs (Course Notes: Chapter VII, pp. 135-146, Slides 3-41, Week 9). This may have contributed to their understanding of special classes and their roles in meeting the gifted needs "I learned that gifted students may hide their abilities because of their classmates so it is better for the gifted not to be taught in regular classrooms but to be taken to special schools where they can meet likeminded students and where their needs can be met" (POC30). His response implies his belief that unless special schools provided for the gifted, gifted students will respond to social disapproval by hiding their talents. Previous research shows
that gifted students not only hide their talents in the absence of appropriate school experiences but also they may deny them (Amabile, 1989; Stanley & Baines, 2002).

The topic about differences between the gifted students comparing to the normal students (Course Notes, p. 123-126, Slides 4-13, Week 8) may also contribute to the improvement in participants’ attitudes toward ability grouping as one participant said "I'm fully supportive of special services for the gifted whether in special classes or schools to match their abilities with the other gifted students" (POC12). So, the information provided in the course about the importance of ability grouping to meet the unique needs of the gifted seemed to influence future teachers’ attitudes positively toward ability grouping.

This improvement in their attitudes toward ability grouping may also reflect their anxiety about being able to cater for the gifted in regular classrooms.

Item 6 (Pre-test), Feelings of other Students: Before the delivery of the course, about half of the participants were unsure about whether special classes for gifted students can make the other students feel undervalued. For example, in Item 6 “When the gifted are put in special classes, the other children feel devalued”, the result shows that less than half of the participants (41.1%) did not see special classes for the gifted would devalue non-gifted students. This shows ambivalent attitudes toward special classes. Ambivalent attitudes may reflect the participants’ unfamiliarity about the use of special class as a support strategy for the gifted.

Item 6 (Post-test), Feelings of other Students: Following the course, most of the participants did not believe any more that putting gifted students in special classes can make other children feel devalued. For example, Item 6 “When the gifted are put in special classes, the other children feel devalued” shows that the percentage was substantially increased from 41.1% who disagreed on the pre-test to 71.2%, which indicates significant improvement in their attitudes toward special classes for the gifted. They, however, believe that differentiating the curriculum for the gifted within regular classroom is which make the other students feel devalued and unequalled. One participant explained

Gifted students like other students with special needs require special programs such as special classes, but if they are to be taught in regular classrooms, they should be studied like others in the class, otherwise the normal students will feel worthless. (POC54)
The participants held a strong concern about equity and the feeling of others especially within the same classrooms. So, they may have found special classes for the gifted as a way to cater for the gifted special needs without hurting the other students’ feeling.

The course was designed to introduce the participants to the challenge of meeting the needs of the gifted in regular classrooms especially in current Saudi schools where teachers are not yet qualified in giftedness (Course Notes: Chapter VII, p. 160, Slide 24, Week 10). This may have contributed to their increased support for special classes for the gifted. They mentioned how difficult it was for the regular classroom teachers to meet the needs of the gifted “I’m with special programs for the gifted like grouping abilities and special classes, but not in the regular classrooms, teachers have no time to manage different teaching activities for the gifted” (POC12). Generally, the participants support special classes for the gifted.

Item 20 (Pre-test), Gifted as Role Model: Before participating in the course, more than half of the participants were in favour of leaving the gifted in regular classrooms to serve as an intellectual stimulant for the other children. For example, in response to following Item 20 “Gifted children should be left in regular classes, since they serve as an intellectual stimulant for the other children”, sixty per cent of the participants agreed to leave the gifted in regular classrooms to serve as an intellectual stimulant for the other children, suggesting an attitude that the gifted could be role models for other students. This reflects their resistance to special classes for the gifted as Gagné pointed out (Gagné, 1991).

Item 20 (Post-test), Gifted as Role Model: The attitudes of the majority of the participants were improved with regard to the need for special classes for the gifted. A sizable number of participants no longer held the attitudes that gifted children should be intellectual stimulants for non-gifted students. For example, in response to Item 20 “Gifted children should be left in regular classes, since they serve as an intellectual stimulant for the other children” the result indicated an improvement in their attitudes where the percentage of students agreeing increased from 40% to 69.7%. The course was designed to introduce the participants to the definitions and characteristics of gifted students which show how high the ability of the gifted is from others peers (Course Notes, pp. 53-78, Slides 1-71, Weeks 4 & 5). One of the participants mentioned, “This will make low achieving or even normal student feel
frustrated to cope with the class task” (POC58). Another participant gave an example “the gifted may always answer teacher’s questions and make no time for the other students to participate” (POC22). This reflects the improvement in the participants’ attitudes toward special classes and schools for the gifted.

Generally, the attitudes of the majority of the participants were improved toward ability grouping in special classes and schools. This change could be attributed to three reasons. First, they were concerned about the time required for teachers to plan and challenge the needs of the gifted while teaching other students within regular classrooms. Second, equity issues which may make the other students feel devalued within regular classrooms. Finally, high ability of the gifted which set them apart from others peers.

Sub-scales related to Social Value, Acceleration, and Rejection of the gifted by others were found to have relatively poor reliability on the quantitative questionnaire (Section 3.5.2). Hence they were only used to compare and contrast the participants’ attitudes before and after participating in the course about giftedness in each focus area. The items were analysed item-by-item comparisons. They were compared for agreement and disagreement among participants. The items were also examined in pre and post comparisons.

4.4.2.2.4 The Sub-scale: Social Value

RQ3.D: What are the attitudes of future teachers in special education toward the social value of the gifted?

Given the lack of research related to teachers attitudes toward the social values of the gifted, Begin and Gagné (1994), suggested that this variable deserved further study. The “Social Value” category measured the participant’s perceptions of the social usefulness of gifted persons in society. Two items were in this category to indicate the value of the gifted in Saudi society (Items 17 and 33). The following Table 4.11 shows the items and percentages of the participants’ attitudes toward social value of the gifted.
Table 4.11

Social Value Sub-scale

<table>
<thead>
<tr>
<th>Items</th>
<th>Pre %</th>
<th>Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td>17. I would very much like to be considered a gifted person.</td>
<td>92.2</td>
<td>81.2</td>
</tr>
<tr>
<td>33. The leaders of tomorrow's society will come mostly from the gifted of today.</td>
<td>84.3</td>
<td>80.5</td>
</tr>
</tbody>
</table>

Items 17 (Pre-test), Preference and Value of the Gifted: Most of the future teachers in this study valued the gifted person in society and preferred to be gifted. The majority of the participants in Item 17 (92.2%) preferred to be gifted, which may represent the culture value of the gifted in society. One participant explained why he would like to be gifted: “everyone likes to be gifted because gifted people can have prestigious positions in society and also to be a productive leader” (PRC27). It is interesting to note the usefulness of the gifted person in society was linked to the expectation of having respected careers in future. So, it is not surprising to have more than ninety per cent of the participants preferring to be gifted. It is assumed that an increased level of one preferred to be gifted would result in more positive attitudes toward those gifted students (Begin & Gagné, 1994b; Chipego, 2004).

Item 17 (Post-test), Preference and Value of the Gifted: Compared to the pre-test, after the course, some of the participants may have realised that there are issues and personal, or social implications of being gifted. The percentage fell slightly from 92.2% to 81.2%. The course was designed to introduce the participants to some of the important problems facing gifted students; such as frustration, bored in the regular classroom, self-esteem and acceptance (Course Notes: Chapters VII and VIII). One participant stated “I don’t see much of what was giving in the lecture is implementing in our schools, so I think the gifted will remain unchallenged and bored” (POC8). This view may indicate their concern of being gifted and not having enough support. However, this does not mean participants became more negative toward the gifted. This minor decrease in their attitudes may be due to their increase awareness of the challenge and problems gifted students may face and have in schools.
Item 33 (Pre-test), Gifted and Leadership: The majority of the participants perceived that the gifted individuals of today are the leaders of tomorrow. When asked about if “the leaders of tomorrow's society will come mostly from the gifted of today” Item 33, the majority of the participants (84.3%) felt that the gifted individuals of today are the leaders of tomorrow. This may indicate the valuing of the gifted in Saudi culture. Some of them viewed the gifted as a treasure as stated by one participant: "They are our treasure" (PRC54). They were also seen as having a big role in the growth of Saudi Arabia: “the gifted plays a great role in advancing our country” (PRC22). Another participant also said that: “gifted students will contribute positively in developing any societies” (PRC58). A further participant acknowledged their roles in developing knowledge and technology “Certainly they will serve the country in several areas such as science and technology" (PRC30). This may reflect the importance of the gifted in Saudi Arabia. In addition, the productivity of the gifted in the society may have shown to be a stimulus for valuing the gifted. Their views also align with government rhetoric (Course Notes: Chapter I: Slide 38, Week 1).

Item 33 (Post-test), Gifted and Leadership: The results remained identical after the course in the regard to the theme “Social Value”. For example, Item 33 “The leaders of tomorrow's society will come mostly from the gifted of today”, shows that the majority of participants (80.5%) remained highly positive toward the value of the gifted in Saudi society. All the comments in the semi-structured interviews (N=6) acknowledged that gifted students are an important resource and play a great role in developing the society. One participant said "gifted students produce and create valuable things to countries" (POC58). Another participant explained how his attitudes improved since the start of the course “the course introduced me to their roles in developing countries and I think they will advance our society” (POC12). This suggests that most of the participants acknowledge the essential roles of gifted students in the Saudi society. The results also may indicate the influence of Saudi culture on the participants’ beliefs (implicit knowledge).

The following section is to highlight the differences in attitudes, between pre and post-test, toward school acceleration for the gifted.
4.4.2.2.5 *The Sub-scale: Acceleration*

RQ3.E: What are the attitudes of future teachers in special education toward the Acceleration?

Acceleration strategies are often recommended for gifted students in acknowledgment that they learn faster and need educational experiences that are appropriately paced for their rate of learning. In addition, there are many forms of acceleration, some of which provide children with the opportunity to learn material at a faster rate (compacting, telescoping) (Colangelo & Davis, 2003) and some of which mean that children are moved to a more appropriate learning level such as skipping a grade. Skipping a grade, that is a student being promoted to a grade level above that normal for their age, is the only acceleration strategy accredited by the Saudi educational system, and is the most popular form of acceleration (Batterjee, 2010). Thus, the participants of this study would understand the practice of acceleration as skipping a grade.

Two items were asked to indicate the attitudes of the future special education teachers toward acceleration (7 and 34).

Table 4.12

*The Sub-scale Acceleration*

<table>
<thead>
<tr>
<th>Items</th>
<th>Pre %</th>
<th>Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Most gifted children who skip a grade have difficulties in their social adjustment to a group of older students.</td>
<td>27</td>
<td>21.3</td>
</tr>
<tr>
<td>34. A greater number of gifted children should be allowed to skip a grade.</td>
<td>71.1</td>
<td>70.8</td>
</tr>
</tbody>
</table>

Item 7 (*Pre-test*), Acceleration and Social Adjustment: Most of the participants did not agree with the following negative statement that “Most gifted children who skip a grade have difficulties in their social adjustment to a group of older students” (Item 7). More than two-thirds of the participants (73%) did not believe that acceleration would harm the gifted socially. Hence, they were positive toward acceleration. Participants have acknowledged the benefits of acceleration for the gifted socially. One comment was “indeed, I fully support acceleration because
gifted students are usually achieved well academically and it is easy for them to move up and adapt to the higher grades” (PRC70). However, reasons for those few participants who did not support gifted children being accelerated were based on beliefs about the ability of children to cope suggesting attitudes that gifted children lacked resilience or maturity. Another reason for resisting acceleration was a concern about key understandings being skipped. One of the comments was “For me, I think that if a child is accelerated then it will be difficult for him/her to cope with the upper level” (PRC12). Another participant was concerned about the gap and hole in the knowledge gifted students may have as a result of acceleration “studying step-by-step is better, if we assume that a gifted student is in fourth grade and transferring to the sixth, there are materials in the classroom are based on previous classes, for example, questions in mathematics in sixth grade can only be resolved by reference to lessons in the previous classes, so I do not support acceleration” (PRC8). By and large, the majority of participants were in favour of acceleration as a way of helping gifted students.

Item 7 (Post-test), Acceleration and Social Adjustment: At the conclusion of the course, the participants still perceived acceleration as a way to meeting gifted students’ needs. In response to Item 7, the majority of future special education teachers remained highly supportive of acceleration. Reasons for supporting acceleration were the attitude that acceleration can help gifted students to overcome their feeling of being board in ordinary classrooms and give them the confidence they need “acceleration is good for the gifted; as I learned it gives them the confidence in their study and make them more positive toward schools” (POC58). Another participant showed how his attitude toward acceleration was improved. At the beginning he was concerned about the difficulties the gifted may face when accelerated. However, after the course he was positive “I’m with acceleration to match their abilities with the level they study in, and it is cost less than other service for the gifted” (POC12). It is interesting those two reasons were mentioned for gaining the supports for acceleration (matching the ability and cost) which were discussed in the course (Course Notes, pp. 149-150, Slides 61-65, Week 9). By and large, the majority of the participants still perceived acceleration as a way to meet gifted students’ needs.
Item 34 (Pre-test), Gifted Students Should be Accelerated: Most of the participants showed their preference, in Item 34, to acceleration as a way of supporting gifted students. More than (71.1%) of future teachers agreed that “A greater number of gifted children should be allowed to skip a grade”. It may be due to their familiarities of this strategy as only accredited method in Saudi educational system for the gifted (Batterjee, 2010) and this may explain why the participants support acceleration at the beginning of the course but not special classes.

Some future teachers have acknowledged the benefits of acceleration for the gifted academically and socially. One of the participants who acknowledged its importance said: “Once it has been proven that the gifted has all the information and skills that are needed to skip a grade, they should be accelerated for the benefits of the gifted” (PRC58). This indicates the participants support for acceleration.

Item 34 (Post-test), Gifted Students Should be Accelerated: Most of the participants remained highly supportive of acceleration at the end of the course. In response to Item 34 “A greater number of gifted children should be allowed to skip a grade” around (70.8%) of future special education teachers agreed. The majority of the participants started with positive attitudes toward acceleration which may explain why attitudes remained positive. One of the participants said “instead of wasting their [the gifted] times in ordinary classrooms, the course showed me how acceleration can help them learn better and faster” (POC30). Generally, most participants remained supportive of acceleration with some evidence of acquiring more information about acceleration.

4.4.2.2.6 The Sub-scale: Rejection of the Gifted by Others

RQ3.F: What are the attitudes of future teachers in special education toward the rejection of the gifted by others?

This sub-scale is about the recognition of the rejection and isolation gifted students usually face (Al-Magid, 2003; Winner, 2000). For example, the extent to which gifted students are marginalised or have difficulty making friends or interacting with others. There were two main sub-factors associated with this factor; rejection by teachers, and rejection by friends.

Three items were asked: Item; 19, 22, and 31. The following Table 4.13 shows the items and their percentages.
Table 4.13

*Social Experiences of the Gifted*

<table>
<thead>
<tr>
<th>Items</th>
<th>Pre %</th>
<th>Post %</th>
</tr>
</thead>
<tbody>
<tr>
<td>19. A child who has been identified as gifted has more difficulty in making friends.</td>
<td>50</td>
<td>61.4</td>
</tr>
<tr>
<td>22. Some teachers feel their authority threatened by gifted children.</td>
<td>47.2</td>
<td>71.9</td>
</tr>
<tr>
<td>31. Often, gifted children are rejected because people are envious of them.</td>
<td>54.4</td>
<td>51.6</td>
</tr>
</tbody>
</table>

Item 19 (*Pre-test*), Gifted and Friends: This item was introduced to show the level of understanding of the gifted student’s social experience by participants. In response to Item 19 “A child who has been identified as gifted has more difficulty in making friends”, half of the participants (50%) perceived that gifted students are able to make friends and find no difficulties in doing so. It indicates their lack of understanding of the gifted student’s social experience. One participant said: “I don’t think it is a problem for the gifted to make friends, ordinary students would like to make gifted friends, because the gifted can help them to learn when they need” (PRC70). His response implies that the acceptance of the gifted by their peer depends on the nature of help they may obtain from the gifted. Another participant went further and explained when it may be difficult for them to make friends: “I think gifted students can build a friendship with others easily, but the problem is when teachers discriminate between the gifted and ordinary students, this will put some barriers between students and creates difficulties in making friends” (PRC8). This particular participant (PRC8) also held also negative attitudes toward differentiation for gifted students within mainstream classrooms, which may reflect a concern about equity and how it may impact on students’ relationships. This connection between rejection and differentiation within regular classrooms is very interesting as it may explain the participants’ resistance toward differentiation.

Differentiation within regular classrooms was seen by some participants as discrimination or inequity and yet can make the gifted rejected by their peers. The interpretation of equity in Islam seems to be confused with equality by participants. Equity in Islam does not mean sameness. Allah in the Holy Book has declared the
In addition, the Prophet Mohammad (peace upon him) acknowledged these differences and assigned different tasks to his companions based on their abilities. Hence, the participants strive for sameness in educational setting (especially within regular classrooms), rather than providing equal opportunities to develop differing potentialities. This leads to the adaptation of a quote by Aristotle when he says: “There is nothing so unequal as the equal treatment of unequals”. So, the future course should address these differences between equity and equality.

Item 19 (*Post-test*), Gifted and Friends: The percentage in Item 19 “A child who has been identified as gifted has more difficulty in making friends” was slightly increased from 50% to 61.4% after participating in the course. This indicates a slight improvement in participants’ awareness about the personal experiences faced by gifted students; in particular, about the isolation and rejection gifted children often face from their age peers. The course may have contributed in improving some participant’s attitudes in regard to this item. Chapter VIII in the course with the title “The most important problems for the gifted students”, illustrates rejection as a common problem the gifted may face by their class-mates and how the gifted protect themselves from peer rejection by hiding their talents (Course Notes, p. 124, Slide 6, Week 8). As one participant explained, “I learned the gifted has high abilities which may make low achieving or even normal student feel frustrated to cope with the class task, this could make the gifted isolated in the class” (POC58). This response implies that being gifted and having high abilities will make it difficult for the other students to cope with the class activities which may result in the gifted being disliked by class-peers. Generally, the result indicates a slight improvement in participants’ awareness about the personal experiences faced by gifted students.

Item 22 (*Pre-test*), Gifted and Teacher’s Authority: Half of the participants perceived that gifted students are not accepted by their teachers because they asked difficult questions which then lead to the embarrassment of teachers. For Item 22
“Some teachers feel their authority threatened by gifted children”, around half of the participants (47.2%) perceived the gifted as threatening to the teacher’s authorities. In response to the qualitative question that probed whether gifted students are welcomed by their teachers in the classrooms, one participant acknowledged that gifted students are not accepted by teachers, explaining that:

Most of teachers feel their authority is threatened by gifted students, especially non-specialised gifted teachers, because gifted students often ask difficult questions which embarrass teachers in front of the class, and that what I feel in myself too if I teach gifted students. (PRC12)

Other participants linked the rejection of the gifted to teachers’ competencies “if the teacher is not scientifically qualified he will definitely face the problem of dealing with the gifted” (PRC8). Another participant had a preference for teaching the disabled and his reason was that “gifted students need gifted teachers who can deal with them and meet their needs and I don’t see myself gifted” (PRC30). These previous responses imply that for teacher to accept the gifted, teachers must be specialised in gifted education or is gifted himself. This is an alarming finding as most of gifted students are taught by non-specialised gifted teachers. It may be that, some participants expressed their rejection to the gifted in their classrooms because their lack of competencies to deal with the gifted. This reason was shown to be linked to the lack of information about differentiation (Paine, 1990).

Item 22 (Post-test), Gifted and Teacher’s Authority: The participants became more aware of the curiosity of the gifted along with the difficult questions they ask, which make the gifted unwelcomed by teachers. The percentage was significantly increased in Item 22 “Some teachers feel their authority threatened by gifted children” from 47.2% to 71.9%, which indicates that the participants became more aware of the rejection of gifted students by teachers. The course was designed to introduce the participants to some of the difficulties faced by the gifted including teachers’ rejection of the gifted (Course Notes: Chapters IV and V, pp. 53-78, Slides 1-71, Weeks 4 & 5).

Two reasons emerged from the semi-structured interviews for gifted students’ are being rejected by teachers. First, teacher’s skills and content-knowledge were seen as the factor for accepting or rejecting the gifted as one of the participants explained, “if gifted students have teachers who lack in their knowledge of their
subjects and lack the abilities in answering the gifted questions, gifted students most likely will be rejected by those teachers” (POC8). Second, some participants see themselves as specialist in disabilities but not in giftedness. As one participant explained, “I think one course [the gifted course] is enough for me as it is not related to my area of expertise ‘disabilities’” (POC58). This may reflect the rejection of the gifted if teachers do not perceive giftedness as is related to their area of expertise or work role.

It is suggested that the acceptance of gifted child by teachers is significant for those involved in planning and implementing gifted programs, including the identification as an important first step. As a result, this information is critical giving the trend of Saudi schools toward inclusion of gifted students in regular classrooms.

Item 31 (Pre-test), Envy and Rejection of the Gifted: Some participants see envy as a frequent cause of gifted being rejected. For Item 31 “Often, gifted children are rejected because people are envious of them”, it shows that the responses were ambivalent where about half of the participants (54.4%) agreed. However, the other half did not agree and may attribute the rejection of the gifted to student’s personalities not to their giftedness, “if a student has sense of humour will be liked by peers, whether gifted or not, it is not related to giftedness but to personality” (PRC8). Some participants were not sure about the relationship between envy and rejection of the gifted. For example, one participant said, “may be some students will do that but not all of them” (PRC12). This indicates that the participants either did not believe in relationship between envy and rejection or were not familiar with such a relationship.

Item 31 (Post-test), Envy and Rejection of the Gifted: The participants still seemed unsure about whether the rejection of the gifted was because envy. Asked about the following statement “Often, gifted children are rejected because people are envious of them” (Item 31), half of the participants agreed while the other half did not. This suggests those participants may still be unsure of some of the gifted students’ social experience such as being rejected or isolated because envy. It may be due to that there was not sufficient information about such issue in the course. It also may be due to the strong position of Islam against envy as one participant explained, “I don’t think that’s the reason, this is unacceptable in our society” (POC12). Envy which is called “Hasad” in Arabic is among the most destructive emotions which a
mankind may have towards another individual. It causes a person to wish evil for others and to be happy when misfortune befalls them. Nevertheless, what Islam permits in contrast to Hasad (envy) is Ghiat (envy that is free from malice). Ghiat means neither loving the loss of the blessing nor hating for it to remain with the person, but desiring the same for oneself without the removal of the blessing from others. The Prophet of Allah (Peace be upon Him) said: “Avoid envy, for envy devours good deeds just as fire devours wood” (Abu-Dawud, 817). So, the participants of this study were not sure if the gifted would be rejected because of such reason (envy) which is not acceptable in Islam.

To conclude, attitudes toward the social experiences of gifted students were ambivalent. Half of participants did not believe that gifted children would be rejected by those around them because of envy or that they would have difficulties when making friends. These variations in their answers could be due to that participant were still unsure of the personal experiences faced by those who are gifted. These findings are supported by prior research that has shown how teachers tend to identify students who are popular, friendly, and well-behaved and showing to be gifted (Davis & Rimm, 2004). Nevertheless, students who have been identified as gifted commonly report feelings of having difficulty making friends with age peers and of being different, alone, estranged, teased and rejected (Clark, 2002; Davis & Rimm, 2004).

Other themes that emerged in the data after the analysis were; knowledge of giftedness (Section 4.4.2.7) and contact with gifted person (Section 4.4.2.8).

4.4.2.7 Knowledge of Giftedness (Pre-test)

In response to a question about defining the gifted child, the majority of interviewees (n=4) defined gifted students as having high metal ability in regard to their peers. One participant stated that, “their mental capacities are higher than their peers” (PRC70). Another participant said, “They are normal like others, but have high mental abilities, especially in maths” (PRC8). This view reflects the general belief of giftedness in the context of Saudi Arabia, where a gifted child is seen as having high mental ability (ALNafi et al., 1992). The term giftedness has been defined in Saudi Arabia as evident in someone who has exceptional academic abilities and who needs special and different education from that which is available in the regular classroom (ALNafi et al., 1992).
Regarding the characteristics of giftedness, the majority of participants supposed that achieving high scores in the classroom’ subjects and participation is indications of giftedness. One participant stated that, “I can identify them through their participation in the class and logical questions they usually ask and also from their high scores in the schools’ subjects” (PRC22). This reflects the prevailing perception of giftedness in Saudi Arabia where gifted child can be identified if he or she academically highly achiever. This view links to popular definitions of what constitutes giftedness that are based solely on academic performance (Dunn, Corn, & Morelock, 2004).

By and large, prior to the course, participants’ answers showed a lack of understanding and knowledge of the characteristics of giftedness and shared stereotypical views found in the literature (Distin, 2006). Findings also suggested the need for experiences that allow future special education teachers to explore their perceptions and challenge of stereotyped beliefs about gifted students.

Knowledge of Giftedness (Post-test): Regarding the definition of giftedness, the majority of participants seemed to improve their understanding of the term giftedness. They included more characteristics of giftedness in their definitions beside high mental ability. One of them stated, “Gifted students are those who have leadership skills and have high mental abilities, the course also added to me that they can be gifted in more than one area” (POC8). Another participant explained how the course has improved his conception of giftedness, “The gifted can be gifted in one or several areas, whether or not in the school subjects, I learned also they can be academically underachievers” (POC30). This indicates that the course seems to increase the participants’ surface views of giftedness.

4.4.2.2.8 Contact with Gifted Person (Pre-test)

In regard to the participants’ contact with gifted person, the majority of the interviewees (n=6) had no previous contact with gifted people. Only two participants indicated previous contact with gifted person. One of the participants who has a gifted relative said “my father was a blind person but he managed to finish his Bachelor degree and taught in schools for several years. After he retired, he has started fixing electronic devices and handles them perfectly” (PRC27). This participant had scored the highest mean on the attitudinal questionnaire (mean=144). This reflects the importance of previous experience. Another participant, who had a
high mean (mean=136) had explained the motive of reason for his attitudes by stating, “I’ve not met any gifted yet, but the needs of our society make me supportive of them” (PRC58). This indicates the importance of perceiving the value of gifted child and reinforces positive attitudes toward the gifted.

Contact with Gifted Person (Post-test): Most of the participants indicated that they hadn’t experienced anything more about giftedness other than the course during the semester. Only one participant came across a TV program about giftedness, “I watched a foreign program the other day about a competition between gifted students and I was thrilled by the mental abilities they have” (POC58). This indicates that the course was mainly the resource for the participants about giftedness, and would eliminate any other experience factors other than the course on participants’ attitudes.

4.5 SUMMARY OF FINDINGS

The present study examined the attitudes of future special education teachers in Saudi Arabia toward gifted students and their education. It also examines in what ways a formal course about giftedness might help in changing their attitudes and why. This section presents a summary of all the results.

The study addressed three major research questions:

1. What are the attitudes of future special education teachers toward gifted students and their education?

The total mean score for pre-test was 3.43, which indicated slightly positive attitudes held by most of the participants toward gifted students and their education. The findings showed that the majority of future special education teachers were positive in their attitudes toward the needs of the gifted. In contrast, ambivalent attitudes was held by future teachers based on personal belief and educational priority, indicated a slight resistance to providing the gifted with differentiation. Result from the Ability grouping sub-scale indicated also ambivalent attitudes held by special education future participants.

2. What factors predict the attitudes of future special education teachers toward gifted education (i.e., age, the participants’ hometown, level of their parents’ education; and contact with giftedness)?
A significant regression equation identified; age and participant’s hometowns as independent variables that are potential predictors of the sub-scale “needs and support”. The result indicated differences between the 19-24 year-old age group and the 25-and above year-old age group. That is, the 19-24 year-old age group, were more positive toward the needs of the gifted than the 25-and above year-old age group. In addition, participants who were from an urban area were more positive toward the needs of the gifted than participants who came from a rural area.

In addition, the variable “Hometown” was identified as independent variable that is potential predictor of the sub-scale resistance. Future teachers who came from a rural area were more resistance toward differentiation than future teachers who were from an urban area. It is significant to note that participants’ hometown was shown to be related to their attitudes toward both previous sub-scales.

The variable of contact with giftedness was also identified as potential predictor of the sub-scale “Resistance”. Participants who had a contact with giftedness were more positive toward the special educational services for the gifted. In addition, a significant relationship was found for parents’ level of education with the ability grouping sub-scale.

3. To what extent does participating in a course about giftedness impact on the attitudes of future special education teachers regarding special services for the gifted?

Sub-questions related to Research Question Three;

a) What are the attitudes toward the special learning needs of gifted students and their support for the provision of special services (Needs and Support) before and after participating in the course?

A paired-samples t-test was conducted to compare pre-test and post-test scores on the sub-scales (Needs and Support) when using .05 alpha level. There was no significant difference in the scores for pre-test and post-test for the sub-scale Needs and Support. The effect size indicated that the attitudes of the majority of participants did not change toward the needs of the gifted and support for special services as a result of the course.

In general, most of future special education teachers acknowledged the needs of the gifted for special attention in order to overcome their feeling of being bored
and to meet their curiosity. The majority of the participants also supported special educational services for the gifted other than what has been provided in regular schools. Their attitudes started positive which may be due to either; culture support or participants’ schooling experience and remained generally unchanged. However, there was qualitative evidence of increasing their awareness about the needs of gifted students after participating in the course.

b) What are the attitudes of future teachers in special education toward gifted education which based on personal belief and opinions about educational priorities (Resistance toward Differentiation) before and after participating in the course?

The paired-samples t-test revealed slightly differences between pre-test and post-test in regard to the sub-scale Resistance. These results suggest that the means were slightly decreased. However, this indicates that the majority of participants are still resistant toward the education of the gifted when is compared to other groups such as normal and disabled students. Normal students were seen as the major resource for Saudi society. Moreover, when the comparison made between the needs of the gifted and the disabled, the disabled were preferred over the gifted because of the disadvantages they have. The majority of participants also remained highly concerned about differentiation within regular classrooms with either elitism or time pressure.

c) What are the attitudes of future teachers in special education toward the (Ability Grouping) for the gifted before and after participating in the course?

Post-test scores on the sub-scale Ability Grouping were higher than the scores on the pre-test. The paired-samples t-test revealed essential differences. Generally, the attitudes of most of the participants were significantly improved toward ability grouping such as special classes and schools. Three reasons were shown to have an impact for their increased support. First, they were concerned about the time required for teachers to plan and challenge the needs of the gifted while teaching other students within regular classrooms. Second, equity issues were raised which may make the other students feel undervalued within regular classrooms if differentiated
to be implemented. Finally, high ability of the gifted which set them apart from others peers.

d) What are the attitudes of future teachers in special education toward *(Social Value)* of the gifted before and after participating in the course?

The results remained identical (highly positive) after the course in the regard to the theme “Social Value”. This suggests that most of the participants acknowledge the essential roles of gifted students in the Saudi society. The results also may imply that the value of the gifted in Saudi society may come from the supportive culture of giftedness and the benefit the gifted does to the country. The results also indicate the possible influence of Saudi culture on the participants’ beliefs (implicit knowledge).

e) What are the attitudes of future teachers in special education toward the *(Acceleration)* for the gifted before and after participating in the course?

Most of the participants have acknowledged the benefits of acceleration for the gifted socially at the beginning and remain positive. It may be due to their familiarity with this strategy as only accredited method in Saudi educational system for the gifted (Batterjee, 2010) and this may explain why the participants support acceleration at the beginning of the course but not special classes. It is also interesting the following two reasons were mentioned for gaining support for acceleration (matching the ability of the gifted with other gifted students and it costs less) which were discussed in the course (Course Notes, pp. 149-150, Slides 61-65, Week 9). Generally, the majority of participants remained supportive of acceleration with some evidence of acquiring more information about acceleration during the course.

f) What are the attitudes of future teachers in special education toward the *(Rejection)* of the gifted by others, before and after participating in the course?

At the beginning of the course, the participants’ responses indicated their lack of understanding of the gifted social experience, where gifted students were believed to have some difficulty in making friends with non-gifted peers.
At the end of the course, an improvement in participants’ awareness was proved about the personal experiences of gifted students; in particular, about the isolation and rejection of the gifted children. Reasons mentioned for rejecting the gifted included being gifted and having high abilities will make it difficult for the other students to cope with the class activities which may result in the gifted being disliked by class-peers.

The participants also became more aware of the curiosity of the gifted along with the difficult questions they ask, which make the gifted unwelcomed by teachers. In addition, another reason emerged from the semi-structured interviews for gifted being rejected by teachers was that teacher's skills and content-knowledge, which were seen as the factor for accepting or rejecting the gifted.

Other themes that emerged in the data after the analysis were; knowledge of giftedness and contact with gifted person.

The participants’ answers showed lack of understanding and knowledge of the characteristics of giftedness and shared stereotypical views found in the literature. However, after the course they showed an improvement in their views of giftedness.

The majority of participants believed that they had no previous contact with gifted people, nor during the experience of course, which indicates that the course was mainly the resource for the participants about giftedness, and would eliminate any other experience factors other than the course on participants’ attitudes.
5 Discussion

5.1 INTRODUCTION

Behavioural and social theories, such as the Theory of Reasoned Action (Ajzen, 1988, 2012) and the Theory of Personal Knowledge (Polanyi, 1966), suggest that attitude could explain human actions. In education, teachers’ attitudes were therefore argued to have a crucial impact on gifted students’ education and their achievements (Brulles et al., 2010; Jacobs & Harvey, 2010; McCoach & Siegle, 2007; Megay-Nespoli, 2001). Yet, understanding the attitudes and belief structures of future teachers, who will one day influence the education of gifted students, is essential to improving professional preparation and teaching practices (Curtis, 2005; Ferrara, 2006; Murtha, 2008; Berman et al., 2012). Therefore, the aim of this research was to examine the attitudes of future special education teachers towards giftedness, and what the origins of these attitudes might be.

Previous research showed that future teachers failed to adequately recognise the needs of the gifted students and, hence, had negative attitudes toward them (Finley, 2008; Geake & Gross, 2008). Yet, changing attitudes, while teachers are in service, was argued to be difficult (Alfahaid, 2002) and, as Nel (1992) has pointed out, “negative attitudes acquired early in one’s career are difficult to change when subsequent experiences are filtered through a negative bias” (p. 23). Therefore, if the negative attitudes of future teachers about gifted students are unchallenged, these attitudes are likely to remain as part of their future teaching practice. Nevertheless, the literature suggests that future teachers, who are involved in a gifted education course or have previous experience of giftedness, develop more positive attitudes toward gifted students than those who were not (Bangel et al., 2006; Buttery, 1978; Megay-Nespoli, 1998; Moon et al., 2010). Hence, the focus in this study was to explore this suggestion in Saudi Arabia context. The current study was designed to extend this knowledge on the attitudes of future special education teachers and how best future teachers could be prepared to meet the needs of gifted students.

The study was an essential component in establishing if future teacher education practices in Saudi Arabia could positively impact on future teachers’
attitudes. It also aimed to examine whether previous experience and cultural norms had any impact on their attitudes. The attitudes of future special education teachers were assessed before and after the course about giftedness. The Gagné and Nadeau’s (1991) attitudinal questionnaire was used as the measurement tool. A semi-structured interview was also conducted to provide a deeper understanding of the participants’ attitudes in regard to each sub-scale.

This chapter, organised by research questions, compares the findings with those reported in the literature. Three research questions are discussed below: Research Question One (Section 5.2); Research Question Two (Section 5.3); and Research Question Three (Section 5.4). The chapter concludes with a summary (Section 5.5).

5.2 RESEARCH QUESTION ONE: ATTITUDES TOWARD THE GIFTED

RQ1: What are the attitudes of future special education teachers toward gifted students and their education?

The answer to this question draws on the responses to the Gagné and Nadeau’s (1991) questionnaire. The overall mean of the total scale indicates that the majority of future special education teachers in this study had slightly positive attitudes toward the gifted (Section 4.3.1). The three sub-scales from the attitudinal questionnaire (Gagné, 1991) satisfactorily met the internal reliability criteria, and the means were calculated. The following sections discuss the results in relation to each sub-scale: need and support (Section 5.2.1); resistance toward differentiation (Section 5.2.2); ability grouping (Section 5.2.3).

5.2.1 Sub-scale: Needs and Support

The mean for the first sub-scale (needs and support) suggests the future teachers had slightly positive attitudes towards the gifted student. Thus, the majority were positive in their attitudes toward recognising the needs of the gifted. For example, more than 95.5% of the participants agreed that gifted students require special attention in order to fully develop their talent (Section 4.4.2.2). Further, the teachers acknowledged the educational needs of the gifted and expressed support for their needs.
This study confirmed previous research suggesting that most future teachers generally display positive attitudes towards the needs of the gifted (Chipego, 2004; Gagné, 1983; Gallagher, 2007; Lewis & Milton, 2005; Song, 2001; Tomlinson et al., 1994). It is interesting here to note that though these earlier studies were undertaken in different countries and at different time periods, but the future teachers’ attitudes toward the needs of the gifted students were similar. One study by Song (2001) examined the general attitudes of Korean and American early childhood educators towards giftedness and gifted education programs and factors that might affect those attitudes. He found agreement between Korean and American early childhood educators on the needs and support for the gifted.

These positive attitudes of the participants toward the needs of the gifted were also consistent with the findings of Chipego (2004), who investigated the attitudes of 392 south-east Pennsylvanian elementary classroom teachers toward gifted education. The data were collected through a revised version of the Gagné and Nadeau’s (1991) “Opinions about the Gifted and their Education” questionnaires, and through Chipego’s (2004) demographic questionnaire. The results revealed that the teachers, on average, had slightly positive attitudes toward gifted students. However, the results of the current study contradicted other research. McCoach and Siegle (2007) examined a total of 262 American teachers' attitudes toward the gifted and gifted education. The univariate follow-up ANOVAs analysis indicated that special education teachers had a statistically significant lower mean toward the needs of the gifted compared to other teacher groups.

In the current study, it appears that the cultural value of the gifted in Saudi Arabian society may have played a crucial role in the participants’ starting with a positive attitude toward the needs of the gifted. As one participant stated: “They are our treasure and we need to look after them” (PRC54). The gifted were also seen as having an important role in the growth of the country; “the gifted plays a great role in advancing our country” (PRC22).

5.2.2 Sub-scale: Resistance to Differentiation

Although a slight majority of the participants in this study were positive toward the needs of the gifted, they were resistant to the notion of making special provisions for the gifted in the regular classroom (Section 4.3.1). Such resistance is not only
found in the population of Saudi future teachers. For example, Smidchens and Sellin (1976) examined that attitudes of 116 American education future teachers toward academically gifted learners. The findings revealed that future teachers had positive attitudes toward the gifted and their education, yet they disagreed about providing these students with special provisions. According to Gallagher (2007) and McCoach and Siegle (2007), this dichotomy suggests that teachers’ attitudes generally oscillate between the quest for excellence and the inclination toward egalitarianism. Indeed, Gallagher (2007) argued that fear of elitism may cause the majority of American teachers to resist the provision of support for gifted students.

Gross (1999b) found that the wider societal explanations for the negative attitudes towards the special provision for gifted students related to the dilemma between striving for excellence and a predisposition toward equity. Thus, a desire for equity has led to the assumption that students are alike and, therefore, should be given the same attention as other students. Gross also argued that this myth has led to an approach called the “one-size-fits-all” in educational provision. The outcome has left the gifted bored, frustrated, and held back, while the teaching emphasis is placed on the average student. Saudi Arabia, along with Australia and New Zealand (Gross, 1999b) and the US (Fiedler et al., 2002), seem to have experienced this phenomenon.

This resistance to gifted special provision is in contrast to the support for education provisions being made available for students with disabilities. For example, more than 60% of the participants agreed with the following questionnaire item; “We have a greater moral responsibility to give special help to children with disability than to gifted children” (Section 4.4.2.2). The response indicated that disabled students were perceived as being more in need of special services than the gifted students. One reason is that some future special education teachers see gifted programming as "competing" with disabled education for support. For example, one interviewee stated that “the gifted has the potential already, but disabled students are still disadvantaged and needs more attention” (PRC54). Another identified reason was that “Disabled students are more in need of care and programs because the gifted can develop their potential by themselves, but the disabled cannot live and grow up without help” (PRC12).

Another contributing factor for resisting the special provision for the gifted compared to the disabled could be the future teachers’ longer exposure to disability
courses than courses related to the needs of the gifted. Indeed, previous research has identified experience with disability as an important factor positively influencing attitudes toward the disabled (Genskow & Marglione, 1965; Praisner, 2003; Preininger, 1968; Siegel & Moore, 1994). Further, this belief in the necessity of special service for the disabled, and not for the gifted, may be due to the interest shown in disability education that occurred in Saudi Arabia early in the 1960s (AL-Muslat, 1994). This view is reinforced by the findings that gifted education policies and practices are of recent origin (Batterjee, 2010).

The participants’ levels of resistance to offering differentiation for the gifted identified in the current study is consistent with Curtis’ (2005) findings on the attitudes of American future teachers toward the gifted. Although, the American participants were positive toward the needs of the gifted, based on their personal beliefs and educational priority, they were resistant toward differentiation for the gifted, especially when compared to providing educational opportunities for those with disabilities. A similar tendency was shown by Finish teachers, who emphasised the needs of the disabled students over those of the gifted (Tirri et al., 2002). However, in terms of educational priorities in special education, there were significant differences between the Finish teachers and the American teachers. Finish teachers were similar to participants in the current study in that they were more in favour of special services for students with disabilities than for the gifted students. According to Tirri et al. (2002), “In the Finish society, the school system has traditionally looked most after the weakest members of the society, for example, the children with disabilities” (p. 12). Similarly, the Saudi teachers reflected the Saudi culture and educational system which has, since the 1960s, cared most for children with disabilities (AL-Muslat, 1994), while policy recognition of gifted education has been established only in the last few years (Batterjee, 2010).

Another reason given for resisting differentiation for the gifted was that gifted education involved special privileges for the “already advantaged”. For example one participant commented that, “if I would have gifted students in my ordinary class, I’ll focus more on the ordinary students because I know gifted students have high mental abilities and can make it on their own” (PRC22). Such perceptions are similar to the myth enunciated by teachers in the Forum (1980) study, where classroom teachers declared that gifted children are expected to “function within a curricular setting
without additional help or instruction from teachers because of their giftedness” (p. 89). Further, Tirri et al. (2002) found that Finish teachers preferred to keep the gifted within the regular classrooms. It seems their lack of knowledge was behind the participants’ misunderstanding of the needs of the gifted for special provisions. This widely held attitude, however, had detrimental outcomes, with the needs of the gifted children not being met.

A critical strategy in meeting the needs of the gifted appears to be differentiation (Morrissey, 2006; Mulhern, 2003; Sheehan, 2011). Equity and time pressures for teachers were found to be reasons for the resistance shown by some participants in the current study toward differentiation, that is, a special service being provided for the gifted within the regular classroom, as cited in response to the holding of negative attitudes toward the needs of the gifted in mainstream classrooms (Gross, 1999a; Tomlinson et al., 1996; Whitmore, 1980). Additionally, one interviewee stated that, “within the regular classrooms, I do not even try to discriminate in teaching my students, but treat them equally” (PRC54). This opinion implies a view that it is unjust to provide gifted students with special practices and teaching strategies in the mainstream classroom and that teaching all the students the same thing at the same time will ensure equity for all students. Another participant argued that “providing a gifted student with special attention in the mainstream classrooms is not fair for the others, all students should be given equal attention if they are study within the regular classrooms” (PRC30).

The respondents maintained that it was important to provide a fair quantity of time and attention to all students, rather than give more time or attention to some groups of students, including the gifted within mainstream classrooms. Giving special practices and teaching strategies to gifted students was perceived as providing less attention and time to the other students in the classroom, and would result in treating students inequitably. These beliefs align with Gagné’s (1991) theme of ideological resistance toward differentiation. Indeed, the current study confirms that the possible lack of knowledge before the course can result in the participants being confused about the difference between the quest for excellence and the inclination towards egalitarianism. It may also be related to the strong concern of Saudi society about equity (Al-Alwani, 2005).
Similarly, in Japan, the emphasis in general education is on equality for all (General Teaching Council for Northern Ireland, 2006). Differentiation does not exist in the Japanese educational system, with only students with severe intellectual disabilities or sensory impairments provided with special education. In line with the ideas of collectivism in Eastern societies, the Japanese view the separating of the gifted children from their peers as an attempt to diminish their understanding of the role they play in Japanese society (General Teaching Council for Northern Ireland, 2006). This notion provides another explanation as to why Saudi future teachers tend to resist differentiation within the regular classroom.

In the current study, time pressure was also noted as an influential factor on future teachers’ negative attitudes toward differentiation within the regular classroom (Section 4.4.2.2). Within the curriculum differentiation approach, teachers must adjust the curriculum, and find additional resources, to match the needs of the gifted learners. According to VanTassel-Baska and Stambaugh (2005), and congruent with the current findings, the “lack of planning time” for teachers is a major barrier or inhibition to the implementation of differentiation for gifted students. For example, the participants argued that they sometimes feel overwhelmed by the increasing diversity in their classrooms, especially with the limited allocated class time. As found in earlier research (Tomlinson et al., 1996), such concern has the teachers focusing the effort and attention on teaching the average students, and, consequently, negative attitudes toward the gifted are likely to be developed.

The results from the current study are consistent with the research of Westberg and Archambault (1995), Tomlinson et al. (1994), and Gallagher and Weiss (1986), that is, the greatest barriers to effective gifted programs within regular classrooms arose from a lack of planning and teaching time. The findings appear to relate to the participants’ experiences of differentiation. For example, teachers with field experience of differentiation tend to have more positive attitudes toward differentiation and feel more capable of implementing the necessary programs (Hudson et al., 2010; Rash & Miller, 2000).

5.2.3 Sub-scale: Ability Grouping

The third sub-scale (ability grouping) measured the respondents' attitudes toward special homogeneous groups (classes and schools). Although the future
special education teachers were positive toward the needs of the gifted, they were ambivalent about the efficacy of groupings for the gifted. The participants were unsure about the benefits of special classes and schools. For example, the findings for the questionnaire item, “The best way to meet the needs of the gifted is to put them in special classes” (Section 4.4.2.2), revealed that almost half of the participants (56%) saw special classes for the gifted as the best option to meet the needs of the gifted. However, 44% of the participants did not agree with the notion of grouping or their advantages. This outcome could be due to their lack of information and experience about such a strategy, as ability grouping does not exist as yet in the Saudi school system (Al Qarni, 2010). According to Al Qarni (2010), “ability grouping remains a neglected area in the teaching of the gifted children in Saudi Arabia, and does not exist, although a few efforts to introduce this concept may occur at individual centre level” (p. 67). Two reasons for the unwillingness to embrace grouping ability were: the fear that separate classes would lead to segregation and elitism, and the groupings would not help the ordinary students. For example, concerns about segregation and elitism were evident in response to the questionnaire item: “When the gifted are put in special classes, the other children feel devalued” (Section 4.4.2.2), more than half of the participants (58.9%) agreed that special classes for the gifted would devalue the education given to the non-gifted students. These results mirror those from previous studies (Gallagher, 2007; Gross, 1999b). According to Fielder, Lange and Winebrenner (2002), this commonly held myth shapes teachers' attitudes to the gifted and their education.

The second reason for resisting special classes for the gifted was the notion that the gifted can help other children in the regular classes by providing intellectual stimulation for them. For instance, 60% of the participants (n=90) agreed that, “Gifted children should be left in regular classes, since they serve as an intellectual stimulant for the other children” (Section 4.4.2.2), suggesting a belief that the gifted could be role models for other students. For example, one participant stated: the “school’s activities are enough for the gifted, and they should stay in the mainstream classrooms in order to help ordinary students” (PRC58). This statement, given before enrolling in the course, appears to reflect their lack of knowledge about the needs of the gifted for ability grouping, and confirms Gagné’s (1991) and (Gallagher, 2007) earlier findings.
Indeed, the participants in the current study share the two misconceptions found in Gallagher’s (2007) study of the attitudes of future primary school teachers toward ability grouping. These misconceptions are that ability grouping creates elitism or that the gifted students are needed as role models for the other students. Gallagher identifies these misconceptions as arising from the participants’ lack of experience with gifted students, their lack of understanding of the characteristics of giftedness, and their limited explicit knowledge of the necessary provisions for the gifted. The current study confirms that future teachers, despite holding positive attitudes toward the needs of gifted students, still subscribe to a number of popular myths and misconceptions surrounding gifted education.

There is a contradiction between the future teachers’ belief that the gifted should be supported and their apparent lack of enthusiasm for some of the methods by which this support can be achieved, such as ability grouping. The researcher ascribes this paradox to the teachers’ lack of knowledge about ability grouping for the gifted. To eliminate this barrier, the benefits of ability grouping for the gifted needs to be shared with the future teachers to help them become informed and knowledgeable about research based best practice.

5.3 RESEARCH QUESTION TWO: DEMOGRAPHIC VARIABLES AND ATTITUDES

What factors predict the attitudes of future special education teachers toward gifted education (i.e., age, the participants’ hometown, level of their parents’ education; and contact with giftedness)?

Begin and Gagné (1994a) saw the benefit of identifying which characteristics are the best indicators of effective teachers of the gifted. A number of researchers of attitudes have investigated predictor variables that indicate positive attitudes toward the gifted (Begin & Gagné, 1994a; Chipego, 2004; Curtis, 2005; McCoach & Siegle, 2007). The current research also investigated predictor variables cited in the literature that could determine the reasons for the differences between the participants in relation to gifted education.

A multiple regression analysis was conducted to examine the proposed theoretical model involving the attitudes of future special education teachers toward the gifted and their demographic variables. The findings identified the following
demographic variables (age, participant’s hometowns, level of parents’ education, and contact with giftedness) that contributed statistically to the prediction of special education future teachers’ attitudes toward gifted students and their education.

5.3.1 Age

The results of this study indicated significant differences between the under 25 participants and those 25 years and older. That is, the 19-24 year-old age group were more positive toward the needs of the gifted than were the 25 and above age group.

In their study, Begin and Gagné (1994a) found similar results. They analysed 35 studies into the predictors of attitudes toward gifted education and determined that “age” was an essential predictor of attitudes toward the gifted. For example, Schey (1965, as cited in Begin and Gagné, 1994), using age as a predictor variable, identified that younger teachers were significantly more supportive toward the gifted than older teachers. Aljabber (2004) also found a significant difference between future teachers’ attitudes based on the age variable. Another study by (Alfahaid, 2002), examining the attitudes of 409 Saudi teachers toward the gifted, found that younger educators were more favourably disposed toward gifted students than were older educators. Such results were confirmed by the current study.

However, other studies, contradicting these results, showed that older teachers held more positive attitudes toward the gifted than younger teachers (Cramond & Martin, 1987; Curtis, 2005; Wiener & O'Shea, 1963). For example, Curtis’ examination of the attitudes of future teachers toward gifted students and their education revealed that female future teachers over 25 held more positive attitudes towards the general needs of the gifted than did the younger future teacher. One possible reason for the different findings could be related to the impact of the participant’s gender. Indeed, previous studies have shown differences between male and female teachers’ attitudes toward the gifted (Allodi & Rydelius, 2008, September; Cooley & et al., 1984).

Nevertheless, the negative attitudes held by the older participants in the current study may be explained by their real world teaching experiences. For example, the older teachers were upgrading their diploma qualification by studying for their bachelor’s degree in education (Section 4.2.1) (King Saud University, 2012). As a consequence, the differences may be explained by their teaching experience rather
than being related to the age factor. For example, Moon, Callahan, and Tomlinson (1999) determined that beliefs about teaching tend to remain stable over time. Thus, as the age factor increased, the more experienced teacher is more likely to resist change. Additionally, as gifted education involves the planning and implementation of new programs, the experienced teachers may perceive this work as requiring extra planning time and commitment. Therefore, to bring about a change in their attitudes, it is important to reengage their interest and increase experience in gifted education. This outcome can be achieved by providing adequate staff development, as well as knowledge based in theory and practice.

5.3.2 Hometown

Generally, the future teachers from urban areas were more positive in their attitudes towards the needs of the gifted than were future teachers from rural regions. These findings suggest a difference between the urban and rural cultures. Likewise, future teachers from a rural region were more resistant towards differentiation for the gifted than were future teachers from an urban area (Section 4.2.2). Three out of four participants having very negative attitudes came from rural areas. One participant stated: “I’m not from the city but from a village and I’ve never heard about giftedness or any programs for them” (PRC8). When asked by the researcher how he would care for the needs of a gifted child, he “laughed…I don’t think I’ll treat him/her differently from their siblings”. This statement appears to reflect his concern to avoid elitism, even with his own children. Another participant revealed, “I studied up to high school in a village school and we were all the same in our abilities, we had around 100 students in our school and I did not notice any differences between us or that one was better than the others” (PRC12). Previous research shows that rural culture may elicit even more concern about elitism than larger communities (Bell & Fishkin, 1987; Colangelo et al., 2002). According to Bell and Fishkin (1987), educator respondents rural culture as being egalitarian. Hence, it is recommended that an awareness program into the needs of the gifted student must involve rural schools to help overcome community resistance.

Importantly, the cultural values of modesty and egalitarianism elicit resistance to gifted education. Thus, according to Freeman (2002), it is highly unlikely that Scandinavian countries will ever conceptualise giftedness in the way that educators in the US and the UK do. The Scandinavian educational philosophy is also rooted in
the cultural values of modesty and egalitarianism. As a consequence, it is regarded as somewhat improper to claim personal privileges (Persson, 1998). As noted above, this philosophical approach also exists in the Saudi rural areas (Al-Silami, 2010). Generally, services for the gifted in rural schools were shown to be insufficient, due to the rural culture of resistance to giftedness. For example, Colangelo et al. (2002) assessed the current state of gifted rural education in the US in the 20 most rural states, and gifted education practices and obstacles in rural schools. While the majority of the teachers identified the services for the gifted in rural schools as being insufficient, they attributed the situation to a number of obstacles, including the resistance by the rural culture to giftedness. In another study, Nelson and Janzen (1988) found significant differences between urban and rural Kansas principals’ attitudes toward gifted education. The lack of information about gifted education appears to make rural principals more resistant towards, and less supportive of, gifted education.

A further reason for the resistance of gifted education in the rural culture is the lack of appropriate training and workshops in this area. For example, Florida (2003) views the ideal city as “a font for creativity and innovation” (p. 3), whereas rural areas are isolated with fewer opportunities and professional support (Al-Silami, 2010). Further, in Saudi Arabia, the gifted centres are available only in the larger cities. These centres usually offer training workshops for teachers and supervisors about enrichment, teaching strategies, and thinking skills (Al Qarni, 2010). Rural teachers, however, do not have the opportunity to attend these workshops. As a result, they lack exposure to gifted education and are less interested in gifted education and, according to their supervisors, are less interested in developing students' creativity (Al-Silami, 2010). The problem appears to be two-fold: (1) most of the rural students, as well as their parents, hold the belief that academic achievement and the development of giftedness is a waste of time; and (2) most parents in rural areas were found to be illiterate, less educated, and held negative attitudes towards giftedness (Al-Silami, 2010; Preston, 2006). These reasons help explain the resistance by rural future teachers towards differentiation.

5.3.3 Parents’ Level of Education

The current study used parents’ level of education and its predictive value on future teachers’ attitudes toward gifted education as a possible predictor variable.
This aspect of the study is important given the lack of previous research into this potential predictor. Nevertheless, a comprehensive literature review study by Begin and Gagné (1994b) found that there was a significant relationship between parents’ level of education and their attitudes toward giftedness. Additionally, McCoach and Siegle (2007) also identified a significant relationship between this predictor and attitudes toward gifted education. The current study’s results were congruent with these earlier findings.

The variable “Father’s education” was confirmed as an independent variable, that is, a potential predictor of positive attitudes toward ability grouping for the gifted (Section 4.2.3). Thus participants whose father had a graduate degree were more positive towards the notion of ability grouping for the gifted than were participants whose fathers did not have a university degree. This finding supports previous research where parents’ levels of education were shown to have a critical role in encouraging giftedness in their children (Al-Silami, 2010; Peña, 2000; Preston, 2006). Preston (2006), for instance, found that a strong relationship existed between parents’ level of education and students’ creative thinking abilities. Such educated families appear to encourage their children’s giftedness (Peña, 2000). Similarly, Hongli and Yulin (2006) noted differences in students’ creative thinking abilities between the two family groups (educated and non-educated families). Hence, the interests of the students with non-educated parents about giftedness tend to be less than the interests of the students with highly educated parents (Al-Silami, 2010).

5.3.4 Contact with Giftedness

Previous experience with giftedness was shown to influence attitudes toward gifted education (Bangel et al., 2006; Buttery, 1978; Megay-Nespoli, 1998; Moon et al., 2010). For example, knowing a gifted friend or being gifted oneself is a more direct way of knowing about giftedness. When examining these two variables, as possible predictors of both teachers’ and parent’s attitudes toward the gifted, Begin and Gagné (1994b) combined the variables, naming the combination “contact with giftedness”; they found them to be related to attitudes towards the gifted. Similarly, Zietlow (1998) also concluded that teacher participants, who had contact with the gifted had more positive attitudes towards the gifted students and their education.
Thus, personal experience with the gifted, either their own or that of a friend, tends to result in a positive attitude to gifted education (Southern, Jones, & Fiscus, 1989).

In the current study, these two variables were also examined in regard to future teachers’ attitudes toward the gifted. While the results were not statistically significant in regard to the sub-scales (Section 4.2.4), qualitatively, those interviewees having contact with giftedness were more positive towards the special educational services for the gifted than those who had no contact (Section 4.4.2.2). For example, one participant, who scored the highest means in the attitudinal questionnaire, has a gifted father and a brother who works for the gifted centre in Saudi Arabia. Their score appears to reflect such contact, and illustrates the importance of personal contact with giftedness in determining attitude. Additionally, gifted future teachers or those with gifted friends may be more confident in their teaching abilities and, at the same time, be less threatened by teaching gifted students. Further, such experiential contact with giftedness may inspire a more creative attitude to learning about giftedness.

In summary, confirming previous studies, the current study found that four demographic variables (namely: age, hometown, parent’s level of education, and contact with giftedness) were potential predictor variables for future teachers’ attitudes toward gifted students and their education.

5.4 RESEARCH QUESTION THREE: IMPACT OF THE GIFTED COURSE ON ATTITUDES

To what extent does participating in the gifted course impact on the attitudes of future special education teachers regarding special services for the gifted?

Without adequate information about the gifted, future teachers rely on their previous beliefs about giftedness. Such conceptions or misconceptions, which appear to be based on cultural norms and schooling experiences (Hansen & Feldhusen, 1994; Polanyi, 1966), tend to be taken into their future classrooms and teaching approach. In the current study, future special education teachers were enrolled in a compulsory course about giftedness. Their attitudes were assessed before and after their participation in the course to determine the extent to which such participation impacts upon the attitudes of future special education teachers towards special
services for the gifted. Six sub-questions investigated their attitudes in regard to the six dimensions identified by Gagné (1991), as outlined below.

5.4.1 Needs and Support

The literature review into the impact of university courses about giftedness on future teachers’ attitudes found the impacts to be mixed. For example, some future teachers involved in a gifted course developed more positive attitudes toward gifted students than those who did not undertake such courses (Bangel et al., 2006; Buttery, 1978; Hudson et al., 2010; Megay-Nespoli, 1998; Morrissey, 2006). In contrast, other studies reported no change in their attitudes following their participation in course about giftedness (Begin & Gagné, 1994b; Berman et al., 2012). Indeed, Begin and Gagné’s (1994b) review of the literature on the influence of coursework in gifted education on attitudes revealed that, in a number of studies there was no significant relationship between being involving in a course about giftedness and attitudes toward the gifted.

In the current study, most future teachers started with moderately positive attitudes toward the needs of the gifted and their attitudes remained positive at the completion of the course (Section 4.4.2). The special education future teachers’ positive attitudes may have been influenced by: (1) their general supportive culture for giftedness; and/or (2) their studies, which included knowledge about children with a variety of disabilities and their acceptance of the differences in others (McDiarmid, 1990; Pajares, 1992).

The future teachers’ attitudes, while not changing noticeably before and after the course, they did gain more knowledge and understanding about giftedness. The interviews revealed that the course had increased the future teachers’ awareness of the needs and characteristics of gifted students. As reported by the participants, this was achieved through the readings and lectures in the course. For example, having background information about giftedness (as provided in Chapter IV of the Course Notes) gave them a better understanding of the characteristics and needs of gifted students. Further, they acknowledged having a greater awareness of the gifted students' characteristics and their needs (Section 4.4.2.2). These findings support those of Copenhaver and McIntyre (1992), who found that participating in a course
about giftedness increases teachers’ information of the characteristics and needs of the gifted.

5.4.2 Resistance toward Differentiation

Gagné’s (1983) original investigation into this topic identified a negative attitude among the participants, namely, that gifted students should not be singled out for special support. These attitudes reflected that support for gifted children was elitist or that society had a greater obligation to support students with disabilities. In the current study, paired-samples t-test revealed significant differences between the pre-test and post-test attitudes, however, the size effect was small (Section 4.4.2.1). The majority of the participants were resistant to differentiation when compared to supporting other groups. For example, when a choice was made between the needs of the gifted and the disabled, the needs of the disabled were preferred because of the disadvantages they usually face.

These results are similar to the findings from Siegel and Moore’s (1994) study into the attitudes of 46 fourth and fifth grade regular education teachers toward gifted students, disabled students, and normal students. Higher levels of concern were reported for the disabled students in comparison to either gifted or normal students. Badt’s (1957) study of the attitudes of 210 university students toward exceptional students and special education revealed that the majority ranked the disabled children as being most in need of service, while the gifted children’s needs were ranked last.

One potential contributing factor for participants to support disabled students’ educational provisions rather than the gifted students’ provisions could result from the participants’ longer exposure to disability courses than courses about the needs of the gifted. As noted previously, experience with disability is an important factor influencing attitudes positively toward the disabled (Genskow & Marglione, 1965; Praisner, 2003; Preininger, 1968; Siegel & Moore, 1994). As a consequence, there is a belief in the necessity of special services for the disabled. This outcome can be seen in the current study, through the future teachers’ strongly held views and answers about, and their compassion for, students with disabilities. Their response also reflects fifty years of interest in disability education in Saudi Arabia, which began in the early 1960s (AL-Muslat, 1994). There has been no long term familiarisation with the gifted students’ needs, as gifted education policies and
practices are of recent origin (Batterjee, 2010). Hence, it seems that the notions about the need for gifted education are hard to change, especially through attendance at only one course.

Additionally, most future teachers also remained highly concerned about differentiation within regular classrooms. It was suggested that attention to gifted students in the class would: contribute to elitism; result in less attention and time being given to the other students; and result in treating students inequitably (Section 4.4.2.2). The course used in the current study appears not to have adequately overcome these concerns; therefore, any future course should also address such matters. The participants’ beliefs align with Gagné’s (1991) theme of ideological resistance to differentiation. The present findings also confirm Winstanley's (2004) assumption that “Providing for the able prevents other pupils from benefiting from provision, resulting in elitist practice” (p. 64). However, it is Gross’s (2004a) contention that such a statement reinforces this misconception, a misconception that has continued to dominate society’s way of thinking, especially about the gifted.

Another concern for the participants in the current study revolved around differentiation within the regular classrooms, and was related to time pressures (Section 4.4.2.2). For example, the class allocated time often inhibits teachers from meeting the needs of the gifted, perhaps because of the lack of practice available during the course. Further, the participants unchanged mindset and attitudes towards differentiation may result because “teacher education programs transmit essentially conservative perspectives and future teachers do not have the conceptual tools to transcend these ideas” (Pierce & Adams, 2009, p. 3). Using new ideas in a classroom usually happens more effectively if teachers have seen it modelled (Bangel, 2007). This lack of applied use of differentiation would affect concerns. Thus, future teachers’ attitudes towards differentiation appear hard to change by only acquiring surface level of knowledge (information). Berman et al. (2012) also identified that, where future teachers were involved in a semester-long course, specific to gifted education, they showed no improvement in their attitudes toward differentiation; however, they did become “concerned about the workload necessary to deal with gifted children in their classrooms” (p. 23).

Some future teacher attitudes have been identified as relating back to their schooling experiences. According to Lortie (1975), they spend thousands of hours as
students. These experiences, especially in Saudi Arabia, mean that the future teachers had witnessed teachers having little time for planning within their busy teaching schedules. Al-Alwani (2005) also found that Saudi teachers work long hours, and had a heavy workload, with few hours for planning and teaching. Consequently, until future teachers are provided with real world teaching experience, that incorporates the various recommended strategies, techniques and pedagogy, teacher education programs will continue to reaffirm previous assumptions rather than challenge them (Koehler, 1985; Lortie, 1975; Nel, 1992; Pajares, 1992). After reviewing about 40 studies concerning change in teachers’ attitudes, Kagan (1992b) determined that an individual’s experience during their schooling years is a powerful factor in influencing attitudes that continue to remain unless challenged.

5.4.3 Ability Grouping

A significant outcome from the current study was that the attitudes of the majority of future teachers improved towards the notion of ability grouping, such as special classes and schools. The finding suggests that their surface knowledge and understanding of such services increased (Section 4.4.2.2). Hence, the course provided the participants with the opportunity to learn about ability grouping for the gifted and the critical differences between the gifted students and the normal students. As stated by one of the participants: "I'm fully supportive of special services for the gifted whether in special classes or schools to match their abilities with the other gifted students" (POC12).

Improved attitudes toward ability grouping may be ascribed to the following reason: future teachers continued to resist special services for the gifted within the regular classroom because either the amount of time required for teachers to plan and challenge the needs of the gifted, while teaching other students; and, fears about equity which may make the other students feel devalued.

Gifted students like other students with special needs require special programs such as special classes, but if they are to be taught in regular classrooms, they should be taught like others in the class, otherwise the normal students will feel worthless. (POC54)

The participants held very real concerns about elitism and the feelings of the other students. This is a very important finding as Saudi future teachers continue to
resist differentiation within the regular classroom. As a consequence, special classes and schools for the gifted could be seen as a way of catering for the gifted students’ special needs without hurting the other students’ feeling. Indeed, this option may be a practical means for meeting the needs of both gifted and normal students.

5.4.4 Social Value

According to Begin and Gagné (1994), given the lack of research into teachers’ attitudes towards the social values of the gifted, this variable deserved further study. Thus, the present study measured the “Social Value” category of the participants’ perceptions, that is, the social usefulness of the gifted persons in Saudi society. The before and after the course results remained identical (highly positive) in relation to this category (Section 4.4.2.2). Thus, the cultural norm or knowledge appears to play an essential role in shaping the beliefs of special education future teachers. The findings imply that the Saudi society values the gifted and sees them as benefitting the country. As such, the current study reaffirms Watters and Diezmann’s (2003) contention that: “The future wellbeing of the nation and society is seen as an outcome of fostering productivity and creativity” (p. 1).

The importance of giftedness as a human resource has relevance for Saudi Arabia transitioning from a resource-rich economy to a knowledge economy. As the issue of transition was included in the course, reference to it may have contributed positively toward emphasising the importance of the gifted people’s value to Saudi society (Chapter I of the Course Notes). For this reason and to overcome the participants’ concern about equity, any future course should also emphasise the link between the value of the gifted in society and the requirement to meet their needs through differentiation.

5.4.5 Acceleration

Acceleration strategies are often recommended for gifted students in acknowledgment that they learn faster and need advance educational experiences that are appropriately paced and challenging for their rate of learning. An important factor that enhances the success of acceleration is the positive attitude of the teachers (Colangelo, Assouline, & Gross, 2004). Despite all the benefits of acceleration for gifted students, some teachers remain sceptical and often resist this option for their gifted students. However, the majority of the participants in the current research
acknowledged the benefits of acceleration for the gifted both at the beginning and end of the course (Section 4.4.2.2). For example, in response to Item 34, the attitudinal questionnaire, approximately 80% agreed that: “A greater number of gifted children should be allowed to skip a grade”.

In the Saudi Arabia educational system, skipping a grade is the only accredited method of advancement for the gifted (Batterjee, 2010), and so it is not surprising that most future special education teachers should be aware of this strategy. Indeed, this familiarisation may also explain why the participants supported acceleration at the beginning of the course, while they did not support the notion of special classes. In addition, more participants became aware of the benefit of acceleration, as a result of the course. Moreover, acceleration was seen as a way of matching the student’s ability and cost little. For example, one participant commented: “I’m with acceleration to match their abilities with the level they study in, and it costs less than other services for the gifted” (POC12). The future teachers were also exposed to these two reasons during the course (Course Notes, pp. 149-150, Slides 61-65, Week 9).

Other studies (Hoogeveen et al., 2005; Wardman, 2009) have investigated teachers’ attitudes to accelerating gifted students, after receiving specific training on giftedness and acceleration. Their results showed the teacher had more positive attitudes towards social competence, school achievement, and motivation of accelerated students. The current study supports the importance of knowledge to improve attitudes toward acceleration, especially after the future special education teachers gain an understanding of the emotional problems of accelerated students. For example, a number of the participants recognised acceleration as a way to help gifted students to overcome their feelings of boredom in the ordinary classrooms, and to give them the confidence they need to continue to excel. Generally, the future special education teachers remained supportive of acceleration, acquiring additional information about acceleration during the course.

5.4.6 Rejection

The recognition of the potential rejection and isolation gifted students face is an important influence on the future teachers’ attitudes (Al-Magid, 2003; Begin & Gagné, 1994a; Winner, 2000). For example, gifted students are often marginalised,
have difficulty making friends, and interacting with others. Two main sub-factors are associated with this factor: rejection by the teachers, and rejection by friends.

The issue of whether gifted students are able to develop friendships has been addressed in previous research (Austin & Draper, 1981; Betts & Neihart, 1988; Rimm, 2002; Shechtman & Silektor, 2012; Terman, 1926; Udvari & Rubin, 1996). Indeed, having a high level of academic ability, and being different, often results in social pressures on the student to moderate their own achievement (Gross, 2004a; Hollingworth, 1926; Silverman, 1989). Terman and his colleagues (1930) identified similar pressures in their study of 1500 gifted children in California. Another study found that:

Precocity unavoidably complicates the complexity of social adjustment. The child of 8 years with a mentality of 12 or 14 is faced with a situation that is almost inconceivably difficult. In order to adjust normally, such a child has to have an exceptionally well-balanced personality, and has to be well-nigh a social genius. The higher the IQ, the more acute the problem. (Burks et al., 1930, p. 579)

The finding from the current study found that, at the end of the course, the awareness of the participants was improved in relation to their knowledge of the personal experiences of gifted students, in particular, their isolation and rejection. For example, there was a significant increase in the response percentage for questionnaire Item 22: “Some teachers feel their authority threatened by gifted children”. The increase from 47.2% to 71.9% indicates that the participants became more aware of the rejection by the teachers of the gifted students (Section 4.4.2.2). The course, designed to introduce the participants to some of the difficulties faced by the gifted students, including their rejection by their teachers, achieved a significant increase in awareness, almost 30% (Course Notes: Chapters IV and V, pp. 53-78, Slides 1-71, Weeks 4 & 5).

The reasons given for rejecting the gifted included that being gifted and having high abilities will make it difficult for the other students to cope with the class activities, which may result in the gifted being disliked by their class-peers “I learned the gifted student has high abilities which may make low achieving, or even normal students, feel frustrated to cope with the class task; this could make the gifted isolated in the class” (POC58). Previous research also identified that low achieving
and regular students seem to flourish when gifted students have been removed from their classroom (Gentry, 1999).

In the current study, more participants became more aware of the curiosity of the gifted, as well as the difficult questions they ask, both can sometimes make the gifted unwelcome by the teachers. In addition, the semi-structured interviews revealed that gifted students were rejected or accepted by teachers because of the teacher’s skills and subject matter knowledge. Further, as indicated by some participants, the teachers’ knowledge of their subject matter may lead to student underachievement, including that of the gifted. Similarly, a longitudinal study of American youth, using data on 2,829 students, by Monk and King (1994), found that teachers’ content preparation, as measured by coursework in the subject field, is positively related to students’ achievements in mathematics and science. The beliefs of the future teachers in the current study also aligned with VanTassel-Baska and Stambaugh’s (2005) argument that: “Subject matter knowledge, although important for all students, becomes critical for educators working with gifted students” (p. 212). They argued that gifted students are more advanced in subject matter content and need teachers who have advanced knowledge to challenge them beyond the typical curriculum content zones. Some participants in the present study also come to realise that it is very difficult for teachers who lack the content knowledge and scientific process to guide gifted students through some specific strategies, such as independent inquiry. Teacher’s subject matter knowledge was also identified as a factor for accepting or rejecting catering for the educational needs of gifted students.

Another reason given for rejecting the gifted was that some future special education teachers neither considered themselves as specialised in giftedness, nor perceive gifted education to be related to their area of expertise, “special education”. Hence, the rejection of the gifted will occur if the teachers do not perceive giftedness as related to their area of expertise. One explanation involves their long exposure to disabilities courses, with little or no exposure to courses about the needs of the gifted. This result is congruent with that of McCoach and Siegle (2007), who found special education teachers tended to have lower attitudes toward the gifted than did mainstream teachers. They suggested “promoting collaboration between gifted education and special education may help to promote positive attitudes toward gifted education among special educators and general educators” (p. 246). The acceptance
of gifted child by teachers is, thus, significant for those involved in planning and implementing gifted programs, including the identification of the gifted as an important first step. As a result, it is critical that teacher training include gifted courses in special education programs.

Indeed, there are strong alignments between gifted education and special education. However, it appears that the future special education teachers in the current study may not understand the link between the two fields. As suggested by McCoach and Siegle (2007): “we need to forge alliances with our colleagues in special education to promote optimal learning opportunities for students with exceptionalities of any sort” (p. 253).

5.4.7 Knowledge of Gifted Characteristics

The gifted course undertaken for this study appeared to increase the participants’ knowledge of giftedness. For example, before the course, the special education future teachers’ answers showed a lack of understanding and knowledge of the characteristics of giftedness, along with shared stereotypical views, as found in the literature. However, after the course they included more knowledge of the characteristics of giftedness and, generally, showed an increase in their superficial knowledge of giftedness. This outcome is consistent with a similar study by Bangel (2007), which measured future teachers’ attitudes after their participation in courses about gifted education. As with this study, Bangel’s research findings showed that the future teachers demonstrated an increase in their understanding of the characteristics and needs of gifted students (Bangel, 2007).

5.5 SUMMARY

To conclude, the gifted education course appears to be effective in increasing future teachers’ knowledge of giftedness at least at a superficial level. However, the nature of the course may not sufficiently challenge previous concerns and experiences to remove those concerns or experiences, or provide the participants with the capability to differentiate the curriculum effectively for the gifted in mainstream classrooms. Thus, as shown in the current study, despite the increase of surface knowledge about giftedness by the participants, this knowledge might not necessarily translate into effective teaching of gifted students. Nevertheless,
awareness of the differences of gifted students and the needs of the gifted is an important first step.
6 Conclusion and Recommendations

This study investigated the attitudes of future special education teachers toward gifted students and their education. Further, it explored demographic data to identify previously reported predictors that may explain any differences between the participants’ attitudes toward the gifted. The study also examined whether providing an undergraduate course about giftedness would make any change to student attitudes.

This chapter presents an overview of the study (Section 6.1), synthesis of empirical findings (Section 6.2), limitations (Section 6.3), Contribution to theory (Section 6.4), direction for further research (Section 6.5), recommendations for policy (Section 6.6), and postscript (Section 6.7).

6.1 INTRODUCTION

Most gifted students learn and study in regular classrooms both in Saudi Arabia (Al Qarni, 2010) and worldwide (Reis & Renzulli, 2009; Sheehan, 2011). Since teachers’ attitudes influence students’ achievements, the gifted may be disadvantaged if they are taught by teachers with negative attitudes toward the gifted or if they are not prepared to meet their special needs. In addition, information, experience and cultural knowledge appear to be crucial in future teachers’ preparations as they affect their attitudes toward teaching (Feiman-Nemser, 2001; Sheehan, 2011). These attitudes, according to Yara (2009), have a powerful impact on the learning environment and student outcome. Furthermore, the literature review revealed that future teachers, who are involved in a gifted program or have previous experience of giftedness, have more positive attitudes toward gifted students than those who did not have such experiences (Bangel et al., 2006; Buttery, 1978; Megay-Nespoli, 1998). The implication of these studies is that knowledge influences attitudes. Thus, future teachers, who are exposed to gifted education courses, or are aware of the issues around the education of gifted children, may be more positive in their attitudes concerning the education of these children. Hence, the focus in the current study involved the assessment of a university course about gifted education for future
teachers. The hypothesis was that knowledge would influence attitudes towards giftedness.

The research was conducted in Saudi Arabia where significant educational reform is being undertaken to align the country’s social and economic future with changing global circumstances. Like many countries, Saudi Arabia is attempting to develop a knowledge economy, and conditional for the success of this agenda is the identification and support of the more able and intellectually gifted. As part of this endeavour, teachers play an important role in the early identification of, and support for, the gifted. Hence, appropriate future education is seen as important in preparing teachers for this role. In Saudi Arabia, gifted education in teacher education programs falls within the gambit of special education. Consequently, the study focused on future teachers engaged in the special education program.

6.2 SYNTHESIS OF EMPIRICAL FINDINGS

The main objective of the current study was to contribute toward the existing body of research by examining the attitudes of future special education teachers in Saudi Arabia toward gifted students and their education. Consequently, it investigated whether knowledge, presumed to be acquired through a university course about giftedness, would improve attitudes. This aim addressed the more general theoretical proposition canvassed in the literature review, namely, that attitudes towards a particular phenomenon would change if knowledge of that phenomenon was enhanced.

The research was influenced by the theoretical position of Fishbein and Ajzen (1981), and Personal Knowledge Theory (Polanyi, 1966). In exploring the relationship between attitudes and beliefs, it was assumed that attitudes are influenced by beliefs. Therefore, based on the Theory of Knowledge, belief is based on three components: cultural knowledge, explicit knowledge, and experience (Lewis, 1970; Polanyi, 1966). The study examines the extent to which each of these components impacts on the attitudes of future teachers. Accordingly, the following three research questions were examined.

1. What are the attitudes of future special education teachers toward gifted students and their education?
2. What factors predict the attitudes of future special education teachers toward gifted education (i.e., age, the participants’ hometown, level of their parents’ education; and contact with giftedness)?, and

3. To what extent does participating in a course about giftedness impact on the attitudes of future special education teachers regarding special services for the gifted?

6.2.1 Research Question One: Attitudes toward the Gifted

The data suggest that although most future teachers were generally positive toward the needs of the gifted, they had stronger opinions about educational priorities and, at the same time, held egalitarian ideologies that argued all students should be treated the same within the regular classroom. Hence, they were resistant in supporting the provision of special services or opportunities for the gifted. The majority of participants showed resistance to the notion of the gifted program, especially, when comparisons were made with education for those students with disabilities. They indicated that disabled students were more in need of special services than the gifted. The participants’ longer exposure to disabilities courses than courses about the needs of the gifted suggested that the more knowledge the participants had about students the more positive they were towards them.

The first finding was that the participants tended to share common misconceptions held by teachers generally, such as: gifted students are autodidactic, and the gifted serve as an intellectual stimulant for the low-achieving students. These conceptions were found in previous research to be related to the teachers’ knowledge of giftedness (Forum, 1980; Rogers, 2002b; Schunk, 1987; Wiener & O'Shea, 1963; Winebrenner, 2000). Such myths related to gifted education having a detrimental effect on meeting the needs of the gifted children. For this reason, it is more likely for those who holding such myths to resist gifted programs in their future classrooms, as posited by Taylor and Milton (2006).

Additionally, most of the participants were very reluctant towards differentiation practices within the regular classroom, either because of time pressures on teachers or the need for equity. Striving for equity led some participants to assume that all students are alike and, therefore, should be given the same attention. This myth has led to an approach called the “one-size-fits-all” in
educational provision, often leaving the gifted bored and frustrated. The idea of egalitarianism has resulted, to varying degrees, the gifted being held back, and with the emphasis being placed more on the average student. Such action may reduce the great contribution that the gifted have to society, especially in Saudi Arabia, where substantial reforms are seeking to transition the country from a resource-rich economy to a knowledge economy. Unless such beliefs are challenged and replaced, future gifted students, who currently learn and study in regular classrooms, will go unrecognised and fettered.

The findings also identified that the cultural influences play an important role in the attitudes of future special education teachers toward the social value of the gifted in Saudi society and the benefit the gifted can contribute to the country. For example, the majority of future special education teachers were positive toward the social value of the gifted, which is congruent with the theory of knowledge (Polanyi, 1966), namely, the influence of culture on the teachers’ beliefs.

Also, the participants lacked knowledge about special classes and schools for the gifted and, therefore, were undecided and shared some popular myths and misconceptions about ability grouping. The myths relating to elitism and giving help to ordinary students explained why some future teachers’ objected to special classes for the gifted. As the literature suggests, a lack of knowledge and understanding appear to be the main cause of mistaken beliefs and negative attitudes (Clark, 2002; Collins, 2001; Hansen & Feldhusen, 1994; Polanyi, 1966). The outcome of such beliefs is that the future special education teachers may take their ambivalent attitudes and misunderstandings into their future classrooms.

6.2.2 Research Question Two: Effect of Demographic

The current research investigated predictor variables to determine whether some groups of future special education teachers are more supportive toward the gifted than others. The findings identified the demographic variables of age, participant’ hometowns, parents’ education, and contact with giftedness contributing significantly to the prediction of special education future teachers’ attitudes toward gifted education. For example, the results indicated significant differences between the younger future teachers (with no teaching experience) and the older group (with experience in teaching). That is, the younger inexperienced group were more positive
toward the needs of the gifted than the older age group with teaching experiences, supporting the assumption that, as the age of the teachers increased the experienced teachers were more likely to resist change. This outcome may also help to explain why in-service training in previous studies had little impact on teachers’ attitudes toward the gifted (e.g., Alfahaid, 2002). Consequently, to improve their attitudes, the teachers’ interest in gifted education needs to be encouraged at undergraduate levels with the provision of adequate staff development and knowledge that is based in theory and practice.

The findings also support the theory that culture plays an important role in shaping the teachers’ beliefs (Polanyi, 1966). For example, future teachers from an urban culture were more positive toward the needs of the gifted than future teachers from a rural culture. Conversely, participants from rural areas were shown to have more negative attitudes toward the gifted, confirming previous research that rural communities were more concerned with eliminating elitism than larger communities (Bell & Fishkin, 1987; Colangelo et al., 2002).

6.2.3 Research Question Three: Impact of the Course about Giftedness

To what extent does participating in a course about giftedness impact on the attitudes of future special education teachers regarding special services for the gifted?

The working hypothesis for this study was that, if future teachers acquire information about gifted education and the characteristics of gifted students, then their attitudes will change. Thus, future special education teachers were enrolled in a compulsory lecture-based course about giftedness. Their attitudes were assessed before and after the course. There were seven findings related to the impact of the course.

First, the findings indicate that the participants had increased their superficial knowledge of the needs and characteristics of gifted students through the provided course (Section 4.3.2). They reported, frequently, that they perceived an increase in their understanding through the readings and course lectures. Hence, the course appears to be effective in increasing the future special education teachers understanding of the characteristics and needs of gifted students.
Second, the findings support the theory of knowledge, namely, that cultural norms are an important component of teachers’ beliefs. The majority of participants started with relatively positive attitudes toward the needs of the gifted, which reflects the Saudi cultural support of giftedness. Indeed, the course appears to have confirmed their knowledge about the gifted contribution to society. In addition, there was an improvement in the participants’ awareness about the personal experiences of gifted students following the course, in particular, their feelings of isolation and rejection. Further, most participants became more aware of the curiosity of the gifted, along with the difficult questions they ask; both can make the gifted less welcomed by the teachers.

Third, the data related to beliefs about educational priorities illustrate a limited effect of the course on future teachers’ attitudes towards special provisions for the gifted. This outcome was especially true when comparisons were made with the needs and provisions for disabled or regular students. Indeed, attentions to the needs of the disabled were still the priority over the gifted because of the perceived disadvantages of the disabled. It can be argued that this resistance to change is a result of the participants’ longer exposure to disabilities courses. It is, therefore, reasonable to assume that greater exposure to courses about the needs of the gifted would increase their deep knowledge of the gifted, and increase the positiveness of the teachers towards them. Consequently, for the course to be more effective, the future focus should be on acquiring extensive knowledge.

Fourth, future special education teachers remained highly concerned about differentiation within regular classrooms because of either time pressure or elitism. This supports the assumption that school experiences and fear of elitism have a strong impact on attitudes, and the course may not adequately challenge these concerns. According to Lortie (1975), thousands of hours are spent by future teachers as students in their schooling years. Thus, until future teachers are provided with real life experiences in which to place the various strategies, techniques and pedagogy, the teacher education program will only reaffirm previous assumptions rather than challenge them. Hence, the current research identified the need for these assumptions to be sufficiently challenged; without such challenges the future teachers will continue to rely on these assumptions. The future teachers’ attitudes toward differentiation will continue and be hard to change without deep knowledge. The
course information needs to be provided within applied, field experience, provided throughout their study.

Fifth, unlike differentiation, the course was shown to have an impact on the participants’ attitudes in regard to ability grouping strategy. The strategy was shown to be aligned with the participants’ beliefs about the best option for supporting the gifted. For example, they were concerned about the time required for teachers to plan and challenge the needs of the gifted while teaching other students within the regular classroom (representing schooling experience). Also, they were concerned about equity issues (representing cultural norms) within the regular classroom. The result reveals that attitudes are effectively changed when explicit knowledge (the gifted course) is aligned with prior experience and cultural norms.

Sixth, previous experience was shown to play a significant role in the participants’ attitudes, especially toward acceleration. This outcome was evident when their positive attitudes toward acceleration, before the course, were compared to their negative attitudes toward ability grouping.

Finally, the study shows that it is more likely that future teachers bring their culture and experience with them into their preparation programs. Further, they use them to make sense of the information they encounter. The study also highlights that special education future teachers, who continue to hold negative attitudes toward differentiation, are not yet ready to effectively meet the needs of gifted students or fulfil the gifted strategy currently being undertaken in Saudi schools. The gifted course can service as a starting point to focus future teachers’ attention on the varied needs of the gifted and learn about some of their special services. As they move into the classrooms, future teachers need a continuous supportive environment to help them achieve this task. Such support may include university supervisor visits and professional workshops. While the learning and implementation of differentiation will take time, it is essential that the groundwork be firmly embedded so that the transition is achieved as best practice.

6.3 LIMITATIONS

The results of this study are applicable to Saudi future special education teachers selected for the investigation within the current university context. Further
research is needed, however, to determine whether the findings apply to other future special education teachers across other Saudi universities.

At the design stage, the questionnaire was expected to be robust and reliable across cultural domains. However, following the study, it became apparent that some sub-scales were sensitive to the number of participants and items in the questionnaire. Additionally, the questionnaire may be culturally insensitive. For this reason a number of sub-scales need to be revised, along with an increase in the number of items in the questionnaire.

Within the initial design of the study, direct observation of the participants was planned. However, this aspect was found to be impossible as, observation in the Saudi culture is considered as an inspection or assessment of someone’s professional duties. Therefore, in consultation with the course lecturer, observation was eliminated as a source of data, despite the many benefits that would have accrued for the study outcomes. The researcher took into account the potential fear of criticism that could result from observation of the course. In addition, given the culture and the nature of the study, the researcher’s presence may have influenced the phenomenon itself. For example, the lecturer may have changed his activities in the presence of the observer. Also, the participants being observed may have altered their attitude patterns. The result may have been biased responses.

Another limitation of the study rested with the focus on special education future teachers; the role of the lecturer in developing future teachers was not investigated. Further research is, therefore, needed into this role, and into the practises between different universities for the development of future special education teachers in gifted education.

6.4 CONTRIBUTIONS TO THEORY

The results obtained from the current study suggest new insights into the theoretical framework derived from the synthesis of the Theory of Reasoned Action (Ajzen, 1988, 2012), and the Theory of Personal Knowledge (Polanyi, 1966). Figure 6.1 represents the new model, which helps to broaden the view about the relationships between beliefs and attitudes and the direction of relationships between the three components of beliefs. It has contributed to the theory by providing three explanations which were not available previously:
6.4.1 The Relationships between the Beliefs’ Three Components and Attitudes

In order to understand the attitudes and beliefs of the participants in the current study, the following two theories were combined; the Theory of Reasoned Action (TRA) (Ajzen, 1988, 2012), and the Theory of Personal Knowledge (TPK) (Polanyi, 1966). In fact, Silver and Herbst (2007) argue that we should aspire to build such combined theory. According to Hiebert and Grouws (2007), it helps us to “direct researchers’ attention to particular relationships in providing meaning for the phenomena being studied” (p. 373).

Each of the combined theories had an added, complimentary, and value in providing the theoretical basis for examining the attitudes and beliefs of participants. Whereas the Theory of Reasoned Action focuses on the role of beliefs and attitudes in predicting behaviours, the emphasis in the Theory of Personal Knowledge was on the formation of beliefs.

In addition, although TRA distinguished between attitudes and beliefs, it has difficulty explaining how beliefs are formed. So, the suggested combined method of both theories was a practical and coherent way of analysing the attitudes and beliefs of future special education teachers toward gifted students and their education. It provided the conceptual framework and allowed to understand the role of each component of beliefs in attitudes. For example, the culture norms were found to influence attitudes positively toward the needs of the gifted. The new model also proposed that the culture component of beliefs is not one construct as suggested by the Theory of Personal Knowledge, but has sub-cultures, which is worth exploring when investigating beliefs.

6.4.2 The Direction of Interactions between the Three Components of Beliefs

Although, the Theory of Personal Knowledge helped to identify the components of beliefs, it did not clearly explain the direction of relationships between these components. In the current study, the culture norms appeared to be a dominant component of beliefs. For example, the participants’ resistance toward differentiation appeared to be related to their concerns of equity which reflects the culture norms and value of modesty and equity. Its importance lies at the underlying assumptions that to improve attitudes, culture values and concerns should be taken into consideration.
6.4.3 Understanding the Role of Culture and Experience on Acquiring New Knowledge

The proposed model helps to understand the role of culture and experience as a critically important aspect of the formation of beliefs. In the current study, it appeared that culture and experiences played great roles in accepting or rejecting new knowledge. For example, unlike differentiation, the course appeared to have an impact on the participants’ attitudes in regard to ability grouping strategy which was shown to be aligned with the participants’ beliefs about the best option for supporting the gifted. That is, some participants were concerned about the time required for teachers to plan and challenge the needs of the gifted while teaching other students within the regular classroom (representing schooling experience). Also, they were concerned about equity issues (representing cultural norms) within the regular classroom. Consequently, the proposed model would help to predict that knowledge is more effective when is aligned with prior experience and cultural norms.

![Figure 6.1. Proposed new model for beliefs and attitudes toward the gifted](image)

6.5 DIRECTIONS FOR FURTHER RESEARCH

The purpose of this study was to examine the attitudes of future special education teachers toward gifted students and their education. Given the findings noted above, several recommendations for further research are presented below.

1. No females participated in the present study. Future research could investigate the female future teachers who are involved in the gifted
course. The results could be compared to the attitudes toward gifted education of male future teachers. A future research questions could be: What are the attitudes of female future teachers to the gifted? and, do the same demographic variables impact the attitude of female future teachers toward the gifted?

2. A relationship between experience and attitudes toward gifted education was found in the current study. Hence, it is important to enhance future teachers’ interests in gifted education by providing them with deep knowledge and experience that are well based in theory and practice. A future research question could be: To what extent does providing a course about gifted education which includes both knowledge and practical experience influence their attitudes toward the gifted?

3. The present study could be replicated and include general future teachers. This would allow for generalisation to a larger population of future teachers and also provide a strong response rate. A future research question could be: What are the attitudes of general education future teachers in Saudi Arabia toward gifted students and their education?

4. Given the low reliabilities of some attitudinal sub-scales, further research using different measurement scales is highly recommended.

5. As fear of elitism and seeking equity is a major concern for participants, future interventions should address these concerns. A future research question could be: To what extent does including topics of elitism and equity in the intervention help the future special education teachers to challenge their beliefs?

6. Attaining negative attitudes towards differentiation supports the value of offering future teachers with hand-on experience that reflects and challenges their traditional beliefs and attitudes. A future research question could be: What are the attitudes of future teachers toward differentiation before and after being involved in field experience?

7. The study should be replicated to include larger population from different Saudi universities.
8. The research could be extended to look at beliefs and attitudes over time, following future teachers into their early years of teaching.

9. Finally, further research is recommended to examine the attitudes of academic staff members and department heads within faculties of education. Their attitudes may influence those of their faculty, including future teachers and the provision for gifted education. A future research question could be; What are the attitudes of academic staff members in the faculty of education toward gifted students and their education?

6.6 RECOMMENDATIONS FOR POLICY

The findings from the current study have significant implications for policy and practice within Saudi Arabia. For example, the Ministry of Education, the Ministry of Higher Education and lecturers at the universities may use the study outcomes in their planning of professional development opportunities for future teachers, as well as in their evaluation of future teachers’ preparation programs.

The following policy recommendations are suggested, and reflect the future teachers’ thoughts, feeling and attitudes regarding gifted education:

1. The results may assist to the Saudi Ministry of Higher Education to determine which groups of future teachers need to be focused on, and what factors need to be taken into account when developing a gifted education course. For example, whether future teachers of particular ages, hometown, experiences level, or subject areas would benefit most from the provision of gifted education courses and experiences.

2. The evaluation of the effects of a traditional course with surface approach to learning about giftedness on the attitudes of future special education teachers may assist the Ministry of Higher Education to assess and improve teacher education and preparation.

3. The study highlights the need for the planning of a course about giftedness for future teachers to include better delivery methods, such as direct contact with gifted students with hands-on-teaching experience, to ensure a more immediate contact with gifted children and their programs.
4. The results show that the current gifted education course has little effect on the attitudes of future teachers, especially in terms of differentiation. Thus, substantial changes with deep knowledge are required in the type of gifted education course provided and the inclusion of field experience.

5. As the future teachers from rural areas showed more negative attitudes toward the gifted, it is essential to expand their information and awareness base about the needs of the gifted. Additionally, it may be beneficial for legislative support to target rural communities and schools to educate them about giftedness.

6. The course was designed to give the participants general information and an overview about gifted various programs due to the limited hours assigned to the course, So, a future gifted course may require the allocation of more time for these programs including differentiation, with hand-on-teaching experiences on how to implement them.

6.6.1 Thoughts for Improving Future Course

Given the ineffectiveness of the course to impact on future teachers’ attitudes and beliefs toward differentiation, a major reconceptualisation of future teacher education in relation to gifted education is desirable. The suggested Model for a Gifted Education Course for Future Teachers in Saudi Arabia, based on the data from the current study, is discussed below.

As noted earlier, there are a number of limitations in the current gifted education course. Hence, it is essential to assess and improve its structure in order to validate the significant role that future teachers will play in future gifted education. So, to that effect, it is recommended that the gifted education course be based on intensive lectures and field experience. Further, taking into account the Saudi government’s move to a more knowledge based, creative society, and because of the strong influence of Islam, several issues need to be included in the gifted education course: (a) equity in Islam and educators’ misconceptions; (b) incorporating challenging learning experiences that promote higher order thinking and problem solving skills; (c) real world learning experiences for future teachers; and (d) the alignment and design of curriculum, pedagogy and assessment that is relevant to gifted students’ development, interests and needs.
Due to the future teachers’ heavy course loads in Saudi Arabia, these topics included in the course could be addressed over four weeks of lectures and workshops. Yet, another six weeks could be organised around a variety of practical, field experiences, based on the acquired information.

Hudson, Hudson, Lewis, and Watters (2010) identified one key issue facing the teaching of gifted education principles to future teachers, namely, the construct of the gifted course. Indeed, Taylor and Milton (2006) found that most gifted education courses were inadequate to prepare future teachers, practically, to differentiate the curriculum for the gifted. For effective educational outcomes, these courses, previously offered surface knowledge in lecture format with limited contact with gifted students, needed to expand to include direct contact and field experiences with the gifted students.

Differentiation was of great concern and resistance for the future teachers in the current study. Their lack of experience on how to differentiate illustrates the need to modify the content, product and learning environment. Thus, the teachers need to remove the already mastered content by the gifted students, and provide new content and enrichment activities. Hudson et al. (2010) stated that, while planning for differentiation is a great challenge for teachers, the skills about differentiation could be developed at the undergraduate level. For example, the Saudi universities could develop a course in gifted education which can help future teachers to engage with deep knowledge learning about differentiation by including field experience and direct contact with gifted students. Future teachers could spend four weeks (of three-hour sessions) at university. From week five, they may spend two hours at school working individually with gifted students, and one hour at the university to discuss and reflect on their practice and their student’s progress. In their first four weeks at university, they may be exposed to information about gifted students, schools, and policies relating to gifted education. They also may learn about key theoretical models of giftedness, such as Gagné’s (1993, 2010) “Differentiated Model for Gifted and Talented (DMGT)”. They may be introduced to a wide range of related topics (namely, reasons for gifted disengagement, the importance of collaboration between teachers, parents and school personnel in supporting gifted students, incorporating challenging learning experiences that promote higher order thinking and problem solving skills; real world learning experiences for students; and the alignment and
design of curriculum, pedagogy and assessment that is relevant to gifted student’s
development, interests and needs).

During the practical part of the course, each future teacher could be assigned to
a one-on-one with an identified gifted student. The future teachers would have the
opportunity to relate the information learnt from the university-based component
with their practices in the schools. Future teachers can be provided with information
from the classroom teacher about their gifted student’s interests and possible content
to be covered. In the first session future teachers could be asked to find out about
their assigned gifted student. In the six following ninety-minute weekly lessons, the
future teachers are responsible for designing learning activities that would engage
and extend the gifted students. Additionally, future teachers can decide about
appropriate pedagogical approaches and can design the assessment task that aligns
with the curriculum and the developmental needs of their gifted student (Hudson et
al., 2010).

The lecturer, who teaches the course, could be available over practical weeks
by visiting schools and providing future teachers with guidance, assistance and
recommendations for their lesson planning. The future teachers then return to the
university, for one-hour workshop, after each school visit, to discuss and reflect on
their practice and their student’s progress. At the end of their course, the future
teachers would be required to present a showcase of their student’s work, including
the assessment task designed by the future teachers. The outcomes could be shared
with the parents/carers, principles, and teachers.

6.7 POSTSCRIPT

In conclusion, the undeniable role that future teachers play in gifted education
in Saudi Arabia has generated the need to examine the factors that might influence
their success or failure as gifted teachers. This study has identified the attitudes of
future teachers towards gifted students and their education in Saudi Arabia. It has
also provided an overview of the possible effects of teacher’s university course about
giftedness. The findings reveal that future teachers, without relevant deep knowledge
and experience, will rely on their personal experience as a student and the accepted
practice in their culture about giftedness. The outcomes of the study support the
generalisability of the Theory of Reasoned Action (Ajzen, 1988, 2012) and the
Theory of Personal Knowledge (Polanyi, 1966) in predicting the relationships between beliefs and attitudes. The study examined the impact of the course on attitudes toward the gifted based on these theories. The hypotheses, as suggested by both theories, were well supported.

Giftedness and learning how to teach the gifted, especially within the regular classroom, is a challenge to most teachers. However, the task is made less intimidating when the teachers are deeply knowledgeable about giftedness and teaching strategies that benefit both the student and the teacher. For example, it appeared that the current course does not seem to engage the participants in deep understanding about practical strategies. Given the significance of experience in contributing to beliefs (Polanyi, 1966), it would appear that the participants need practical, authentic experiences. For instance sessions would appear to be needed to help them differentiate instruction. The study also informs teacher education in general in that the style of delivery doesn’t really impact attitudes. The influence of cultural knowledge and experience overwhelms what happens in a university course. We could have anticipated this from other literature (e.g., science education). So a lot has to be done to engage students deeply in learning and to challenge existing beliefs.

The current study has provided valuable insights into the modification of pre-existing attitudes towards gifted learning and teaching. In addition, it has outlined the essential steps needed to analyse the effectiveness and relevant issues of the course about giftedness. For Saudi Arabia to transition into a knowledge society, the Ministry of Higher Education could use the current findings to enhance future overall educational outcomes. This study has set the foundation for such future research to explore the improvements and developments of gifted education in Saudi Arabia.
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Appendices

Appendix A Questionnaire

Opinions about the gifted and their education
Francoys Gagne, Ph.D. and Lorraine Nadeau, M.A.
Universite du Quebec a Montreal (Canada)

Part 1

Informational Questionnaire

Please respond to all of the following items to the best of your knowledge. All data collected is confidential. Your participation is greatly appreciated.

1. Gender: Male -------- Female----------

2. Age ----------

3. Hometown: Rural -------- Urban----------

4. Your Parents' Education Level:
   a. Father: School Graduation ------ University Graduation------
   b. Mother  School Graduation ------ University Graduation------

5. Were you considered as gifted by your teachers? Yes ------- No----------

6. Do you have gifted friends? Yes-------- No----------
Part 2

Opinions about the gifted and their education

The following statements concern gifted children and their education; they were taken from newspapers articles, books, and other sources. We would like to know the extent of your agreement or disagreement with each of them. There are no correct or incorrect answers. Please, feel free to express your personal opinion.

1. Use the scale below to give your opinion.
2. Circle beside each statement the number which best represents your opinion.
3. Answer as spontaneously as possible.
4. Please answer all questions.
5. Use answer 3 as little as possible.

SCALE: 1 = totally disagree; 2 = partially disagree; 3 = undecided; 4 = partially agree; 5 = totally agree.
<table>
<thead>
<tr>
<th>Statements</th>
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<tr>
<td>1. Our schools should offer special education services for the gifted.</td>
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<td>2. The best way to meet the needs of the gifted is to put them in special classes.</td>
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<td>3. Children with difficulties have the most need of special education services.</td>
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<td>4. Special programs for gifted children have the drawback of creating elitism.</td>
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<td>5. Special educational services for the gifted children are a mark of privilege.</td>
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<td>6. When the gifted are put in special classes, the other children feel devalued.</td>
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<td>7. Most gifted children who skip a grade have difficulties in their social adjustment to a group of older students.</td>
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<td>8. It is more damaging for a gifted child to waste time in class than to adapt to skipping a grade.</td>
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<td>9. Gifted children are often bored in school.</td>
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<td>10. Children who skip a grade are usually pressured to do so by their parents.</td>
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<td>11. The gifted waste their time in regular classes.</td>
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<td>12. We have a greater moral responsibility to give special help to children with difficulties than to gifted children.</td>
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<td>13. Gifted persons are a valuable resource for our society.</td>
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<td>14. The specific educational needs of the gifted are too often ignored in our schools.</td>
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<td>15. The gifted need special attention in order to fully develop their talents.</td>
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<td>16. Our schools are already adequate in meeting the needs of the gifted.</td>
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17. I would very much like to be considered a gifted person.

18. It is parents who have the major responsibility for helping gifted children develop their talents.

19. A child who has been identified as gifted has more difficulty in making friends.

20. Gifted children should be left in regular classes since they serve as an intellectual stimulant for the other children.

21. By separating students into gifted and other groups, we increase the labelling of children as strong-weak, good-less good, etc.

22. Some teachers feel their authority threatened by gifted children.

23. The gifted are already favoured in our schools.

24. In order to progress, a society must develop the talents of gifted individuals to a maximum.

25. By offering special educational services to the gifted, we prepare the future members of a dominant class.

26. The government should not have to pay for special education for the minority of children who are gifted.

27. Average children are the major resource of our society, so they should be the focus of our attention.

28. Gifted children might become vain or egotistical if they are given special attention.

29. When skipping a grade, gifted students miss important ideas. (They have holes in their knowledge.)

30. Since we invest supplementary funds for funds for children with difficulties, we should do the same for the gifted.

31. Often, gifted children are rejected because people are envious of them.

32. The regular school program stifles the intellectual curiosity of gifted children.
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<td><strong>33.</strong> The leaders of tomorrow’s society will come mostly from the gifted of today.</td>
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<tr>
<td><strong>34.</strong> A greater number of gifted children should be allowed to skip a grade.</td>
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جرى إعداد هذه الاستبيان بهدف تحديد اتجاهات طلاب التربية الخاصة نحو تعليم وتربية الموهوبين، وسوف تسهم المعلومات التي تقدمها إلى المساعدة في تحديد العوامل التي لها أهمية كبيرة في تطوير تعليم الموهوبين وسوف تتيح المعلومات الشخصية كذلك فهم العلاقة بين هذه المعلومات وبين الآراء. كل أجزاء الاستبيان تمثل رأيك الشخصي، فليس هناك إجابات صحيحة أو خاطئة لأي العبارات التي حوتها الاستبيان. فالإجابة التي تبحث عنها هي التي تمثل رأيك الشخصي بأفضل أسلوب ممكن. مع تقديري لجهدك أمل أن تحظى هذه الاستبيان بعنايتك واهتمامك الشخصي. حفظك الله ورعاك وأجعل لك المثوبة.

أخوك

الباحث: عائض القرني
جامعة كويزلاند للتكنولوجيا
معلومات شخصية
الرجاء وضع علامة (✓) في الخانة المناسبة:
- الجنس؟ ذكر □ اثنا □
1- العمر؟ (رقم) ........................................
□ قرية □ مدينة

2- المكان الذي نشأت به: مدينتا □

3- مستوى والديك التعليمي:
□ والدك: مادون التعليم الجامعي □ تعليم جامعي □ موفق التعليم الجامعي
□ والدتك: مادون التعليم الجامعي □ تعليم جامعي □ موفق التعليم الجامعي

4- مستوى أخوائك وأخواتك التعليمي: (اكتب العدد في المربع الخاص بالإجابة)
□ مادون التعليم الجامعي □ تعليم جامعي □ موفق التعليم الجامعي

5- هل صنفت على أنك موهوب في أي من المراحل الدراسية: □ نعم □ لا

6- هل لديك أصدقاء موهوبون: □ نعم □ لا
أعدت هذه الاستبانة لقياس الاتجاهات التربوية نحو تعليم الموهوبين. الرجاء وضع علامة ( ) في الخانة التي تمثل وجهة نظرك في العبارة:

1) معارض بشدة: أي أنك لا توافق نهائيًاً على مضمون العبارة.
2) معارض: أي أنك لا توافق على مضمون العبارة من نواح كثيرة.
3) غير متأكد: لا تستطيع الموافقة أو المعارضة.
4) موافق: أي أنك توافق على مضمون العبارة من نواح كثيرة.
5) موافق بشدة: أي أنك توافق تماماً على مضمون العبارة.
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<tr>
<td>1- يجب أن تقدم مدارسنا خدمات تعليمية خاصة للموهوبين.</td>
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<td>2- أفضل وسيلة لتلبية احتياجات الموهوبين هي وضعهم في فصول خاصة.</td>
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<td>3- الأطفال الذين يعانون من صعوبات التعلم حاجتهم أكبر من غيرهم للخدمات التعليمية الخاصة.</td>
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<td>4- تقديم البرامج الخاصة للموهوبين تعنيها إلى عصر النخبة أو الطبقة المهينة.</td>
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<td>5- الخدمات التعليمية الخاصة للموهوبين تعتبر تمييزاً لهم عن غيرهم.</td>
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<td>6- عندما يتم وضع الموهوبين في فصول خاصة، يشعر الطلاب الآخرون بعدم أهميتهم.</td>
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<td>7- معظم الأطفال الموهوبين يواجهون صعوبات في التكيف الاجتماعي مع الطلاب الأكبر سنا منهم حين يتخطؤن الصفوف إلى صفوف أعلى.</td>
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<td>8- الأضرار الناتجة عن إبقاء الموهوبين بالفصل العادي أكبر من عدم تكييفهم الاجتماعي مع هم أكبر سنا منهم في حال تخطؤهم صفوفهم لمراحل تعليمية أعلى.</td>
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<td>9- يشعر الأطفال الموهوبين غالبا بالملل في المدارس العادية.</td>
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<td>10- الأطفال الذين يتخطؤن الصفوف هم عادة ما يقومون بذلك نتيجة للضغوط التي تمارس عليهم من جانب والديهم.</td>
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<td>11- يضيع وقت الموهوبين في الصفوف العادية.</td>
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<td>12- تتطلب المسؤولية الأخلاقية تقديم المساعدة الخاصة للأطفال الذين يعانون من صعوبات التعلم أكثر من تقديمها للموهوبين.</td>
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<td>13- الأطفال الموهوبين يعتبرون موردا هاما لمجتمعنا.</td>
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<td>14- الاحترام التعليمية الخاصة</td>
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<tr>
<td>نمبر</td>
<td>الأسئلة</td>
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<td>15</td>
<td>يحتاج الموهوبون اهتماماً خاصاً من أجل تنمية مواهبهم.</td>
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<td>16</td>
<td>مدارسنا مؤهلة لتلبية الاحتياجات الخاصة بالموهوبين.</td>
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<td>17</td>
<td>أود أن يكون شخصاً موهوباً.</td>
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<td>18</td>
<td>تقع المسئولية العظمى في تنمية الموهوب على عاتق الوالدين.</td>
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<td>19</td>
<td>الطفل الذي يصنف على أنه موهوب يعاني من صعوبة في تكوين الصداقات.</td>
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<td>20</td>
<td>ينبغي أن يترك الأطفال الموهوبون في الصفوف العادية لأنهم بمثابة المحفز الفكري للأطفال الأخرين.</td>
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<td>21</td>
<td>عن طريق فصل الطلاب إلى موهوبين وغير موهوبين، نحن نرسخ تقسيم الأطفال إلى فوي وضعيف، جيد وسيء.</td>
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<td>22</td>
<td>بعض المعلمين يشعرون بأن سلطتهم مهيبة بوجود الموهوبين في فصولهم.</td>
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<td>23</td>
<td>يمتاز الموهوب أصلاً بحذوة أو أفضلية في مدارسنا.</td>
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<td>24</td>
<td>من أجل تقدم المجتمع يجب أن ننمى مواهب الأفراد الموهوبين إلى أقصى حد.</td>
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<td>25</td>
<td>من خلال تقديم الخدمات التعليمية الخاصة للموهوبين، نحن نضع أفرادهم مثل أفراد الطبقة المسيطرة في المستقبل.</td>
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<td>26</td>
<td>لا ينبغي على الحكومة أن تدفع أماوّلا للخدمات الخاصة المقدمة للموهوبين الذين يعتبرون أقلية.</td>
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<td>27</td>
<td>الأطفال العاديين هم المصدر الرئيسي لمجتمعنا، لذلك ينبغي أن يكونون محور اهتمامنا.</td>
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<td>28</td>
<td>الأطفال الموهوبون قد يصبحون متعبدين، أو مغبوريون إذا حصلوا على الاهتمام الخاص.</td>
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</tbody>
</table>
| 29   | تنفّذ الفرصة لتحصيل المعلومات المهمة على الموهوبين عندما
217

<table>
<thead>
<tr>
<th>أشكرك كثيراً على مساعدتك في هذا البحث،</th>
<th>يتخطون صفوفهم لمراحل دراسية أعلاي.</th>
</tr>
</thead>
</table>
| 30- عندما نقدم دعم خاص للأطفال ذوي الاحتياجات الخاصة، فيجب أن نقوم بنفس الشيء مع الأطفال الموهوبين. | **
| 31- الحسد هو العامل الذي يجعل الناس يرفضون الطفل الموهوب. |
| 32- البرامج العادية المقدمة في مدارسنا لا تساعد الطفل الموهوب على إبراز الفضول الفكري الموجود لديه. |
| 33- موهوب اليوم، هم قادة مجتمع الغد. |
| 34- ينبغي السماح لعدد أكبر من الموهوبين بتخطي صفوفهم لمراحل دراسية أعلاي. |
Appendix B Interview

Section one:

Study title: Attitudes of Future Special Education Teachers toward Gifted Students and their Education

Time of interview: 40min

Date: March- June 2010

Place: Special Education Department, a University, Saudi Arabia

The selected participants have the right to choose whether or not they want to participate in the 40 minutes interview. Participation in this project is voluntary, and participants can withdraw from participation at any time during the project without comment or penalty. Their decisions to participate will in no way impact upon them. There are no risks beyond normal day-to-day living associated with participation in this project. All comments and responses are anonymous and will be treated confidentially. The names of individual persons are not required in any of the responses. Attending the interviews is accepted as an indication of participants’ consent to participate in this project.

Section two:

Q0 Tell me if you have ever had any association or contact with gifted children ...

Q1. How do you describe gifted children (tell me what you know about gifted children) and their needs?

Q2. What special strategies should teachers use with gifted children?

Follow up question:

a) How do you define gifted child?

b) What identification procedures of gifted students can be more reliable?

c) Can you describe the characteristics of gifted students?

d) What do you think about acceleration of gifted students?
Q3. How do you describe your attitudes toward gifted child? Or “tell me how you feel about gifted children?

a) How were you attitudes formed?

b) How do you describe your school's experiences and its impact on your attitudes?

c) To what extent does preservice preparation program impact on your attitudes?

d) Do you remember any situation that has the most impact on your attitudes?

e) How would you describe the gifted education course?

f) What do you expect to get out of this course?

g) How would you describe the effectiveness of gifted education course?

h) How do you describe your ability in teaching gifted students?

If you had a gifted child in your class what do you think you would have to do that is different?

a) How important are the special schools or classes for gifted students?

b) How would you describe gifted education in Saudi Arabia?

c) How do you describe the needs of disabled students and the needs of gifted students?

d) Who do you think has more right to have special services? Why?

Q4. Could you please provide details on how gifted education can be improved?

Thank you for your time and valuable contributions
Appendix C Skewness and kurtosis histogram
Resistance

Mean = 27.17
Std. Dev. = 6.049
N = 59
Mean = 14.55
Std Dev. = 2.537
N = 59