Learning Preferences that Characterize Egyptian Third Grade Preparatory School Gifted Pupils in Zagazig

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Abstract

The aims of this research are to identify learning preferences that characterize third grade preparatory school gifted children in Zagazig City; investigate the differences between gifted and non-gifted children in learning preferences and determine the differences between gifted boys and gifted girls in learning preferences. One hundred and seventy six (176) third grade preparatory school children drawn from four preparatory schools in Zagazig answered the Arabic Version of Triarchic Ability Test (Translated and standardized by the researcher), which assesses their analytical, practical and creative abilities. Therefore, the pupils were classified into five groups according to their scores on the test: practically gifted (N=14), analytically gifted (N=10), creatively gifted (N= 18), balanced group (those who are gifted in three types of abilities, N=33) and non-gifted group (N=40.). All groups completed the Arabic Version of Learning Preferences Questionnaire (Translated, modified and standardized by the researcher), which assesses pupils preferences according to three main areas, using Chi- Square, and K independent samples tests (Kruskal-Wallis). The findings indicated that, there were no differences among the different types of giftedness in learning preferences. Third grade preparatory school gifted pupils preferred to complete mathematics tasks in writing, diagrams, pictures and maps not in spiking. With respect to social context, it was found that gifted pupils preferred to study and work individually by themselves and in groups, but not in pairs. Those children preferred to be leaders of their groups. Further, they like to ask and answer questions in the classroom, interact with their classmates and teachers, and participate in discussions. Additionally, gifted children feel confident when they are studying languages and social sciences rather than when they are studying math and science. According to task outcomes, the findings revealed that gifted pupils preferred process-based tasks over closed tasks. With respect to gender, it was found that, gifted girls preferred asking and answering questions when they are individuals in small groups working with the teacher in the classroom. Whereas, gifted boys preferred to ask and answer questions when the teacher is working with the whole class. When the researcher compared gifted pupils and non-gifted pupils' preferences, the findings indicated significant differences between gifted and non gifted pupils according to the three aspects of preferences (task type, social context and task outcome). These findings are discussed in the light of literature and previous studies. Conclusion, recommendations and suggestions for further research are suggested.

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Introduction

The development of any society depends in a large part on gifted individuals of that society. Therefore, many societies around the world devote extensive care and attention to their gifted individuals. Many centers of giftedness have been established to study the giftedness, and the characteristics, needs, preferences, learning programs of gifted learners.

Gifted individuals are a great power which can lead the progress of modern civilization. *These individuals will be the creators and the leaders of the next generation; they will influence strongly the character and future of our society(Gallagher, 1975,p.9).* So it would seem wise to study and add new evidence to the characteristics of gifted children, particularly their learning preferences, in order to help in reforming gifted education.

Pupils learn in several ways- by seeing and hearing, reflecting and acting; reasoning logically and intuitively, memorizing and visualizing. Pupils bring with them their own learning preferences, and how much they manage to learn depend partly on the learners' ability and prior preparation and also by the compatibility of his or her characteristic approach to learning and the instructor's characteristic approach to teaching (Stapa, 2003, p. 1).

Differentiation can only occur when teachers clearly understand individual strengths, needs, interests, learning preferences (Riley, 2004,p1). If the aim is to create learning experiences which fit gifted children, we have to identify their learning preferences.

Before working with preparatory school gifted pupils, the

teacher should be aware of the characteristics and learning style preferences of these pupils. For example, the years from 9 to 13 of schooling are a time of physical, social, emotional, and cognitive change--also called an "age of ambivalence." Many of these pupils tackle decision making sooner and reach the stage of formal operations (abstract thinking) (Wright and Roos, 1985)

Riley (2004) argued that, there is a mismatch between the strengths, needs, and interests, of gifted and talented children and their planned learning preferences. May be because there is not enough information about learning preferences of gifted learners,

Generally, learners' preferences were classified in six different areas: *preferences for particular kinds of classrooms activities; preferences for particular types of teacher behavior; preferences for particular grouping arrangements; preferences for particular aspects of language which need emphasis; preferences for particular sensory modes, such as visual, auditory, or tactile learning; and preferences for particular modes of learning on one's own outside class (Stapa, 2003,p.2).* There are many differences among gifted pupils themselves in these preferences and among gifted and non-gifted pupils according to these preferences as well.

For instance, it was found that lower ability pupils preferred open tasks that allow for a wider range of possible responses and process-oriented tasks. On the other hand, higher ability pupils preferred closed tasks and product-oriented tasks (Riding and Read, 1996). Additionally, there is a significant tendency among learners towards class content that observes both receptive and productive skills emphasized equally. Further, in classroom sessions, learners would like to see more instructive television programs shown to them, rather than extensive use of blackboard or tape recorders, particularly when learning English as a second language (Stapa,2003,p. 10).

For social context, all ability groups preferred group or pair work to individual work (Riding& and Read, 1996; and Stapa, 3002). Further, Lippitt et al. (1993) found that two-thirds of 459 gifted learners preferred group work. This finding cannot be

generalized on all countries, but it indicates that in some instances, group work or collaborative work is a most favored learning preference for gifted learners(Hoff,2003,p.2).

Gifted children preferred group work activities as an instruction method. When they are directed towards individualized instruction or whole class instruction they lose focus (Hoff, 2003,p.1).

Lower ability pupils often learn most effectively when learning outcomes are clearly identifiable in advance and where tasks focus on small units of learning. It was noticed that gifted students displayed astronger preferences for imaginative styles, whereas, non-gifted children displayed stronger preferences for practical styles. Compared with gifted boys, gifted girls were more likely to prefer imaginative styles (Thomas,et al., 2000).

The reality for gifted pupils is that their needs are not met in the regular classroom (Tomlinson,1993; Hoff, 2003).

Considering gifted pupils learning preferences and thinking styles is important for gifted and talented pupils, because the purpose in differentiation is to match a learning experience to pupils' needs (Roberts& Roberts,2001,p.228). Preparatory school learners generally prefer to participate in social instruction (Tomlinson,1993).

There are some undesirable consequences if gifted pupils are repeating mastered work or working below the right level, such as "the creation of confusion and self –doubt for the child, the production of high levels of frustration; a disillusionment with school, teachers ,and authority in general; a "turn-off" from learning; and an indefensible education" (Cathcart,1994,p.236).

In a review of Arabic studies - edited by Suleiman and Abo-Hashem (2004) - of giftedness and talented in the period from (1983) to (2002) conducted in Arab countries (109 research and study), it was found that there were no indications of learning preferences of gifted learners in general and preparatory school pupils in particular in these studies. This means that there is a gap in knowledge related to learning preferences of gifted pupils in Arabic studies, particularly among preparatory school pupils.

Therefore, it is reasonable to investigate this issue because it will contribute to the mental gifted education reform in Arab countries. It could add some evidence in earlier determination of gifted children. The objectives of this study are to identify learning preferences that characterize third grad preparatory school gifted pupils; determine the differences among different types of giftedness (analytically gifted, practically gifted, and creatively gifted) in learning preferences; and to identify the differences among gifted and non gifted pupils in their learning preferences.

Research problem

From the above review the researcher noticed that the previous studies ignore learning preferences of gifted pupils, particularly for Egyptian children. Further, there is a contradiction among the results of these studies. In addition, there are many approaches to identify the gifted children, among these is Sternberg's approach which has not received enough attention in Arabic literature. All of these findings motivated the researcher to conduct this research. Therefore, the problem can be stated in the following questions:

1- What are the learning preferences which characterize third grad preparatory school gifted pupils?
2- Are there any significant differences between gifted pupils and non- gifted pupils in learning preferences.?
3- Are there any significant differences among different types of giftedness (analytically gifted, practically gifted, and creative gifted) in learning preferences?
4- Are there any significant differences between gifted boys and gifted girls in learning preferences?

Gifted children

Perceptions of giftedness vary even among gifted education specialists. At one time "gifted" was the term used to describe those students who learned quickly and obtained high scores on IQ tests. While these abilities still contribute to our understanding of giftedness (Silverman:2004,p.2).

Several definitions of gifted children have been suggested, the more convenient definition which reflects the current concern with a variety of dimensions of giftedness is suggested by American Education Office of the giftedness (1972).This definition states that: "*gifted and talented children are those identified by professionally qualified persons who by virtue of outstanding abilities are capable of high performance. These are children who require differentiated educational programs and services beyond those normally provided by the regular school program in order to realize their contribution to self and society. Children capable of high performance included those with demonstrated achievement and/or potential ability in any of the following areas. General intellectual ability, specific academic aptitude, creative or productive thinking, leadership ability, visual and performing arts, and psychomotor ability(Gallagher, 1975, 10).*

According to the above definition, giftedness includes the superiority in different areas, and it seems acceptable to argue that there are many types of giftedness and gifted children could fulfill one or more types of giftedness. The above view point may not distinguish between gifted and talented, as it regards both as the same thing. Therefore, it would be reasonable to distinguish between "gifted" and other concepts such as, "genius", "talented", "superior", "rapid learner", "exceptional": *The term **"genius"** used to be widely employed but now it is reserved for reference only to the phenomenally gifted person. **"talented"**, tends to be used when referring to a particular strength or ability of a person. Therefore, it is safe to say that generally the person identified as gifted is one who has multiple talents of a high order. The term **"superior"** is a comparative term. Where a child is classified as" superior" we would like to know to whom, or what group, he or she is superior, and to what degree. A child may be markedly superior to the majority of children in a specific mental ability such as mathematical ability and at the same time be equally inferior in spatial abilities or verbal ability. **"rapid learner"** is a helpful term in understanding*

*giftedness, because it is a distinct characteristics by the identified gifted child. And finally the term "**exceptional**" is appropriate when referring to the gifted child as being different in the characteristics listed earlier*(Kid Source,2003,p.4-5).

The findings of many researchers have given us a deeper understanding of intelligence. Today it is generally accepted that "giftedness" includes a wide range of attributes, from the traditional intellectual measures to interpersonal abilities. According to literature the following set of characteristics were found to be valid for gifted children: Good problem solving/reasoning abilities, extensive vocabulary, long attention span, rapid learning ability, Sensitivity, compassion for others, good memory, ability in puzzles, mazes, or numbers; high degree of energy; perfectionism; preference for older companions; wide range of interests; early or avid reading ability; at times, seems mature for age; excellent sense of humor and perseverance in areas of interest. (Silverman, et al.: 1986; Martinez and Snider: 2000,5-6, and Silverman: 2003, 1-2).

American Educational authorities pointed out many characteristics of gifted children; these are as follows: *shows superior reasoning powers and marked ability to handle ideas, can generalize readily from specific facts and can see subtle relationship; has outstanding problem solving ability.; shows persistent intellectual curiosity; asks searching questions; shows exceptional interest in the nature of man and the universe; Has a wide range of interests, often of an intellectual kind, develops one or more interests to considerable depth. ; Is markedly superior in quality and quantity of written and or spoken vocabulary; is interested in the subtleties of words and their uses.; reads avidly and absorbs books well beyond his or her years.; Learns quickly and easily and retains what is learned; recalls important details; concepts and principles. Shows insight into arithmetical problems that require careful reasoning and grasps mathematical concepts readily. Shows creative ability or imaginative expression in such things as music, art, dance, drama; shows sensitivity and finesse in rhythm, movement, and*

bodily control. Shows outstanding responsibility and independences in classroom work. Sets realistically high standards for self; is self-critical in evaluating and correcting his or her own effort. Shows initiative and originality in intellectually work, shows flexibility in thinking and considers problems from a number of viewpoints.; observes keenly and is responsive to new ideas. Shows cocial poise and ability to communicate with adults in a mature way; and gets excitement and pleasure from intellectual challenge; shows an alert and subtle sense of humor(KidSource online, 2003,p.3).

It is obvious that, no child, pupil, adolescent, student, or adult is outstanding in all of the above characteristic, but gifted individuals have many of these characteristics. Therefore, these characteristics should be taken into account when identifying gifted children. Sternberg, Wagner; Strenberg; Gardner and Renzulli are among the researchers who have had considerable impact in recent years on our understanding of giftedness (Silverman:2003,p.2).

Sternberg &Wagner (1982) revealed that giftedness is a kind of mental self-government. The mental government of one's life in a constructive, purposeful way has three basic elements: adapting to environments, selecting new environments, and shaping environment. The viewpoint of "Sternberg &Wagner" for giftedness includes three processes of insight skills: separating irrelevant information from relevant information, combining isolated pieces of information into a unified whole and relating newly acquired information to information acquired in the past. Gifted students process information rapidly, use insight abilities, and prefer problem-solving abilities (Council for Exceptional Children,2003,p.3).

Recently many useful orientations and theories such as Sternberg' triarchic abilities theory , Gardner's theory of multiple intelligences and Renzulli's three-ring conception of giftedness have been developed and used to identify gifted behavior among students. Theses theories are discussed below in brief.

The Theory of Multiple Intelligences and giftedness

Gardner's model of intelligence (1983) describes capabilities in nine areas. The following summary of these capabilities is drawn from Armstrong (2000,p4):

1- Linguistic intelligence: indicates to children sensitivity to the sounds, structure, meanings, and function of words and language. It includes the use of words effectively both orally and in writing (e.g., writer, orator).
2- Logical-Mathematical intelligence: indicates to children sensitivity to, and capacity to discern, numerical, logical patterns and relationships, The ability to deal with long chains of reasoning (e.g., mathematician, scientist).
3- Spatial intelligence: refers to children capacity to perceive the visual-spatial world accurately and to perform transformations on one's initial perceptions. (e.g., guide, architect, artist).
4- Bodily, Kinesthetic intelligence: The ability to control one's body movements to express ideas; to develop physical skills and to handle objectives skillfully (e.g., actor, athlete).
5- Musical intelligence: The ability to produce and appreciate rhythm, pitch, and timbre , and appreciation of the forms of musical expressiveness (e.g., composer, musician).
6- Interpersonal Intelligence : capacity to discern and respond appropriately to moods, temperaments, motivations, and desires of other people. (e.g., counselor, political leader).
7- Intrapersonal Intelligence: the ability to access to one's -own feeling- life and to discriminate among one's emotions; knowledge of one's own strengths and weaknesses.(e.g., psychotherapist, religious leader).(Gardner, 1983; Campbell and Campbell, 1999, Armstrong, 2000, p.4-5)
8- Naturalist Intelligence: The ability to distinguishing among members of a species; recognizing the existence of other neighboring species, and charting out the relations, formally or informally, among several species(e.g, Naturalist, biologist).

9- Existential intelligence: the ability to deal with the surrounding things in the environment. (Gardner, 1999a)

According to Gardener's theory, there are nine basic types of giftedness. In addition, there are other types of giftedness result from the combinations among these intelligences. Performance within each of the intelligences is developmental. Development may or may not occur at the same rate for all of the intelligences. Gifted students will show patterns of development that exceed their peers in one or several of the intelligences. Historically, gifted students have been identified by excellence in linguistic or logical-mathematical realms. Students with outstanding abilities in other areas may not have been identified for gifted programming. A broader search for giftedness and a commitment to its development includes all of the intelligences (British Columbia Ministry of Education, 2004,p1).

Gardener's theory of multiple intelligence faced many criticisms, these include, lack of statistical measures, analysis and evidence for its validity (Gilman, 2001, p.4-5, Machek, 2003, 2). Further, Gardner did not address the conventional question of where intelligence is one thing or many things. The main criticism of Gardner theory is the belief of some Psychologists that each of the ninth intelligence is in fact a cognitive style rather than a stand-alone construct. Another criticism is that MI theory is not empirical, is incompatible with the general factor of intelligence, heritability, and environmental influences, and broadens the construct of intelligence so widely as to render it meaningless. (Gilman, 2001, p.4-5).

The Three-Ring Conception of Giftedness

After an extensive analysis of research studies of gifted individuals, Renzulli (1986) concluded that giftedness involves the interaction of three sets of characteristics: above average intellectual ability, creativity and task commitment. This interaction may result in giftedness in general performance areas such as mathematics, philosophy, religion or visual arts, or in the performance areas as specific as cartooning, map-making, play-writing, advertising or agricultural research.

According to Renzulli's idea about the characteristics of gifted children, **above average intelligence** includes advanced vocabulary, good memory, learns very quickly and easily, large fund of information, generalizes skillfully, comprehends new ideas easily, makes abstractions easily, perceives similarities, differences, relationships, and makes judgments and decisions. Second **creativity includes,** questioning; very curious about many topics, has many ideas (fluent), sees things in varied ways (flexible), offers unique or unusual ideas (original), adds details; makes ideas more interesting (elaborates), transforms or combines ideas, sees implications or consequences easily, risk-taker; speculates, feels free to disagree and finds subtle humor, paradox or discrepancies. Finally, **task commitment** includes the following attributes: sets own goals, standards, intense involvement in preferred problems and tasks, enthusiastic about interests and activities, needs little external motivation when pursuing tasks, prefers to concentrate on own interest and projects, high level of energy, perseveres; does not give up easily when working, completes, shares products, eager for new projects and challenges, and assumes responsibility (Treffinger,1986, p.40). the question now is: are there consistence in theses characteristics in different stages of education.?

Triarchic Abilities Theory and giftedness

The triarchic theory distinguishes among three kinds of intellectual giftedness: analytical, creative, and practical. Gifted individuals in these different ways excel in different activities, and in answering questions investigated by different kinds of activities (Sternberg, et al., 1996,p. 129). The analytically gifted are strong in analyzing, judging, comparing, evaluating and critiquing. The creatively gifted excel in creating new things, discovering, imagining and inventing; and the practically gifted in applying, implementing, putting into practice, using, and utilizing, but in different ways(Sternberg, et al., 1996, p. 129; and Sternberg, 1997, p. 3). It is possible for individuals to be gifted in none, one, two or all three of these abilities. Indeed, the triarchic theory specifies that the same information-processing

components are involved in all three aspects of intelligence. The differences are in the levels of experience and the contexts in which the components are applied, and the forms of mental representation used within each of the three aspects of intelligence. Therefore, analytical thinking normally includes using the components in abstract and often relatively academic problems, creative thinking which includes using the components to relatively novel and unknown problems , and practical thinking which includes applying the components to concrete and relatively familiar everyday problems (Sternberg, et al., 1996,p. 130).

According to Sternberg theory, there are four basic different groups of gifted children: analytically gifted, creatively gifted, practically gifted and balanced group. Additionally, there are other groups of giftedness that result from the combinations of three gifted types. The researcher will adapt Sternberg's theory in identifying gifted children, since it has not received considerable attention in Arabic research. In addition, we could identify (4) gifted groups according to this theory.

Giftedness and learning preferences

Gifted and talented children require opportunities to pursue advanced level work, be exposed to higher level thinking skills, pursue a self selected interest, work in ability/interest groups, move to a higher grade for specific subject area instruction, and work in advanced curriculum areas(Archambault,et al.,1993). Considering these characteristics and preferences help us to realize their potential. Gifted children have their particular learning preferences which characterize them. Educators use a variety of learning methods and should encourage students to be receptive to different learning methods rather than to try to link specific learning methods to specific learning preferences or styles(Loo,2004,p.1)

Martinez and Snider(2000,p.13) indicated that, gifted children learn in different ways form their classmates. For instance, they learn new martial in much less time than others; perceive ideas and concepts at more abstract levels than others do; are able to

attend to many activities at the same time; tend to remember what they have learned, making spiral curriculum and reviewing previously mastered concepts boring and unpleasant; and they become keenly interested in specific topics and want to stay with those topic until mastering them.

Extensive research in Western countries, Canada , Australia and United States has been done related to learning preferences of gifted children. Some of these studies (Ricca,1983, 1984, Pederson,1985; Paskewitz,19986; and Eitington,1989) suggested that gifted pupils preferred instructional methods emphasizing independence, individual learning, learning in a variety of ways, systematic learning, authority oriented learning, auditory learning, informal groups learning, and they have a high level of flexibility and organization, whereas, non-gifted pupils preferred pear-oriented learning, visual learning peer teaching, and lectures. Thus, these preferences should be considered in gifted children education.

Some evidence showed that in primary education , gifted children revealed higher achievement and attitude tests scores when learning in accordance with their sociological preferences. Although gifted children prefer to learn through certain modalities, usually kinesthetic and tactile, many of them are able to learn difficult material through kinesthetic, auditory and visual instruction. Whereas, lower ability students who prefer one modality can usually only master difficult information through that modality (Martinez and Snider, 2000).

With respect to social preference, it was argued that some pupils achieve best when they are able to study and interact with other pupils. Interactions stimulates and motivates them. Other children particularly, brightest and most analytic achieve best when they work alone. Generally most gifted children prefer concentrating either alone or with an authority. (Dunn, et al.,2004,p 4).

It was suggested that *"the social status of gifted children seems to show a relative decrease at the secondary level. They are able to identify the social status of others and themselves*

better than the average Gifted children tend to choose each others as friends when they are removed from the classroom for a period of time each day. Gifted children lose some general social acceptance when removed from the classroom for special workshop, acceleration at the preparatory level does not seriously affect their social adjustment and gifted children seem to serve as an ego-ideal to the average child, who choose him even though he sees differences between himself and the gifted younger " (Gallagher, 1975, 39).

That is to say social status has a great role in the life of gifted children, hence it would be valuable to investigate social preferences of gifted children with Egyptian gifted pupils.

In a study of gifted children from nine countries, the gifted in several intelligence areas showed similar preferences for learning styles – but those preferences were different from the preferences of other gifted groups and from the preferences of the non-gifted children. In the same line of the above study it was argued that academically able children exhibited preferences for independent study, discussion, and lecture; and gifted adolescents prefer to learn either by themselves or with an authoritative teacher, not through cooperative learning and small-group instruction. And few gifted and talented students wanted to learn with classmates. (Martinez and Snider, 2000)

Dunn et al.(2004, p.4) suggested that gifted and non-gifted children have significantly different learning styles and usually do not perform well with the same methods of learning. When they studied gifted adolescents in nine diverse countries, they found that the participants with talents in athletics, art, dancing, leadership, literature, mathematics, or music showed similar learning style characteristics to other learners (in different countries) who shared a common talent area. Adolescents with similar talents from different cultures had greater similarity of learning -style preferences than did differently talented students from the same cultures. High ability children very often think differently and quickly become bored or irritated by the pedantic

thinking of less able children of the same age. (Dunn et al. 2004, p.6).

With respect to gender differences it was found that males , more than females , tend to be kinesthetic and tactual, needing an informal design and the freedom to move around when concentrating on academic studies. As a group, boys tend to learn less by listening, and they are more nonconforming and peer motivated than girls. Girls, more than boys, learn by listening, and they often are more conforming, authority-oriented, and better able to sit passively at conventional desks and chairs. Girls, also tend to need significantly more quiet while learning (Dunn et al. 2004, p.4).

Related Research

Griggs and Price (1982) investigated learning style preferences of high school gifted students with 170 gifted and averaged 7th, 8th and 9th grad who were identified by Thorindike intelligence test and Stanford achievement tests. The participants completed learning styles preferences. The participants classified into two groups: gifted and averaged, The findings revealed that there were five factors discriminate between the learning style preferences of gifted versus average junior high students. The findings indicated that gifted students are more persistence tolerated the presence of sound and preferred to learn alone. Averaged students showed higher auditory preferences(use of tapes, records, radio, and TV), and greater teacher-motivation than gifted students.

Karnes, et al. (1985) investigated the relationship between the "Children's Personality Questionnaire" and "Style of Learning and Thinking" for 94 gifted 9-14 year-olds. The findings revealed a significant relationship between personality variables and preference for a particular style of information processing.

Patricia (1986) investigated learning style preferences of high school gifted students with 296 high school students and 211 gifted high school students in Virginia who were in grade nine eleven and twelve. The findings revealed that gifted students preferred discussion and independent study, whereas, non gifted

preferred projects, teaching games and programmed instructions. Girls showed higher preferences for projects, simulations, peer teaching, discussion, teaching games programmed instructions and lecture, 9th grade students preferred simulation and teaching games. while, 11th grade students preferred lecture. Gifted students showed a preference to have power over others, and they are more inquisitive. Non-gifted students preferred to study physical education and art whereas gifted students preferred science and math subjects. Although there were a significant differences between gifted and non gifted as well as boys and girls in learning preferences, it was noticed that each group ranked peer teaching and discussions as most preferred, and lecture drill and recitation as least preferred. Generally students preferred learning activities which allow them to be involved or working with others.

Osgood(1986) aimed to compare laboratory school gifted students and public school gifted students and gifted students from average students in educational attitudes and perceptions of school and home environments. The participants were 239 gifted students and a control group of 108 average students. The subjects completed the high school students' perceptions of education scale. Which assess students educational attitudes, perceptions of their school and home environments as well as perceptions of themselves. The findings indicated that gifted students have more positive attitudes towards high school, are intrinsically motivated in their academic endeavors and are more academically competitive than average students. Gifted students showed more pressure from their parents and from themselves to attend a college and to perceive their parents to highly value academic achievement in comparison to public school gifted students. Finally boys showed more positive attitudes towards school than girls.

Perrone, et al., (1985) examined variability on measures of motivation, creativity, social awareness, social skills, and preferred learning activities among 81 gifted preparatory school pupils(grades 2-5). The participants completed a battery of self-

report inventories designed to measure the affective domain of gifted and talented pupils. These measures included the learning style inventory and talent characteristics and creative personality, traits instruments, the findings suggested that there are four groups of subjects that varied considerably in creative personality traits. Sub-group one was more less active and more dependent on parents and teachers for direction for members of other three groups. Group two was more active while ,yet somewhat inflexible, suggesting to be assertive while also being somewhat insensitive. Group three demonstrated attention-getting behaviors, and group four most read for self –directed study.

In a similar study to the above Carney (1986) compared learning styles preferences of gifted and non-gifted students. The participants included. two groups: group one encompassed 40 self directed gifted children, and group two encompassed 38 non-self directed gifted children. These two groups were drawn randomly from a populations of 220 gifted children in grades 5-8. The two groups were identified according to children scores on self- directed learning readiness scale and teacher observation of children behavior. The group embedded figure test, the Swassing-barbe modality index, and the learning style inventory were administered to both groups. The findings indicated that self directed gifted students were found to be more field independent, and the non-self directed students were found to be more auditory. There were a significant positive relationship between field dependent/independent and preferences for peer teaching and discussion. On the other hand, there were a negative significant relationship between the continuum of auditory scores and preferences for peer teaching, discussion, simulation and programmed instructions.

Stanley and Robinson (1989) studied Mathematics achievement and preferences for 114 students in grades 2-7 who participated in a gifted math program, and compared to 146 students who were accepted but did not participate. Participants' scores in mathematical achievement were significantly higher

than non-participants' scores; the groups did not differ on preferences for learning math.

Yong , et al., (1992) Analyzed the Learning Style Inventory scores of 155 gifted African-American, Mexican-American, and American-born Chinese students in grades 6-8. The results indicated significant group differences in preferences for noise, light, visual modality, studying in the afternoon, and persistence. Gender and grade differences were found for some variables.

McIntyre and Yong (1992) investigated the differences between gifted students(n=64) and disable students (n=53) in learning preferences. The findings indicated a significant differences between gifted students and disable students in learning preferences, gifted students are more persistence, motivated, informal design, and kinesthetic modality.

Yong (1993) compared learning style preferences among gifted African-American (n=54), Mexican-American (n=61), and American-born Chinese (n=40) preparatory grade students attending Chicago, Illinois, public schools. Significant ethnic, gender, and grade differences were found. All three groups preferred studying in the afternoon and bright light and did not prefer noise, structure, and authority figure.

Ramsay and Richards (1997) investigated the attitudes of academically gifted students and general cohort toward cooperative learning and academic school subjects with 28 classes of sixth-seventh-, and eight grads in four schools. The findings revealed that in the classes where cooperative learning is used, non-identified children will exhibit more positive attitudes toward cooperative leaning methods than their more academically able peers,. Boys showed more positive attitudes toward cooperative learning than girls. Gifted children compared with non- gifted children, did not show more positive attitudes in settings where cooperative learning is seldom or never used than in setting where such instruction is frequently used.

Begoray; et al. (1998) Compared learning-style preferences of intellectually gifted, average-ability, and special-needs students on the Learning Style Inventory. They also examined the general

differences among ability level and gender. The findings indicated that gifted students preferred learning alone, being self-motivated, and using tactile learning approaches, and that males preferred peer-oriented learning situations.

Thomas et al. (2000) examined learning style preferences of 1554 students (ages 8-17) identified as gifted and non-gifted. The two groups completed learning preferences questionnaire. The findings showed that Gifted students showed a strong preference for imaginative styles, while non-gifted children showed a stronger preferences for practical styles. Gifted girls preferred imaginative style more than gifted boys.

Chan (2001) studied The learning activities and styles of 398 gifted and non-gifted Hong Kong Chinese secondary students. These students were assessed using the Chinese version of the Learning Styles Inventory. The results showed that gifted students indicated significantly greater preferences for learning styles related to interpersonal verbal exchanges and autonomous learning than typical students.

Moon; et al. (2002) investigated the effectiveness of new self-contained classroom with curriculum that was differentiated for highly intellectually gifted students. The participants were among those whose intelligence scores ranged from 148 to 193 on the Slosson intelligence Test. The findings indicated that the self contained classroom provided a challenging learning environment for highly intelligence environment varied considerably, creating different emotional and social outcomes for specific students at different times during the school year. The findings suggested that gifted and talented programming can have differential effects on individual students and that future program evaluation research should attempt to investigate the etiology of these differential effects.

Hoff (2003) investigated the preferred learning methods for 29 preparatory gifted/high potential learners, in one class. The class formed by learners who were identified as gifted. The participants completed learning preference questionnaire. The results revealed that 75% of learners preferred to work in groups

rather than working as individuals. Whereas, 25% preferred to work independently. 80% of participants preferred assignments that lasted the entire period and extended over multiple days. Furthermore two-thirds of the gifted learners preferred smaller assignments when a grade was attached . Gifted learners preferred to choose their own groups over having their groups chosen for them. When learners were asked about the role they preferred when they were in groups; the majority of them responded that they preferred to be the leader. Few gifted learners identified themselves as supporters within the group.

In a study conducted be the British Columbian ministry of education (2004,p.1), thirty-three academically gifted students at Vancouver's University hills Secondary School were asked: "If we as teachers could provide the very best learning situation for you , what would you have us to do?", while responses varied, the major concern was with recognition of an accelerated learning rate: Secondary concerns centered around learning styles. Responses included:

1- *Let me go ahead and work at higher levels.*
2- *Let us work with older kids, we can fit in.*
3- *It's not an age difference but an attitude differences that's important here. Older kids are more accepting.*
4- *Give us independent programs. Let us work ahead on our own.*
5- *Know that everyone has talent and need. Provide challenge(in our talent area)*
6- *Have totally hands on lessons. If we're studying elections, have a mock election. Use more videos, files, and telecommunications.*
7- *Provide independent study opportunities-Let us study something we are interested in, and use humor*

Adams-Byers,et al. (2004) investigated students perceptions of differences in academic and social effects that occur when gifted and talented youth are grouped in special classes for gifted students (Homogenous group) or in class with many ability levels represented (heterogeneous group). the participants perceived

homogenous grouping more positively. With respect to academic outcomes. They learned better in the more challenging environment provided by homogeneous classes. Whoever, they had mixed feelings about which setting better met their social needs. Participants seemed to value having both similar peers in homogenous classes and social diversity of heterogeneous classes. An unexpected result was that preference of a few of the students for heterogeneous classes because they were easier and enabled them to attain a high class ranking with little work.

General view of literature.

According to literature, there is inconsistency among researches' findings. For example , some studies revealed that gifted learners preferred to learn, study and work alone and independently(Griggs and Price, 1982; Eitington, 1989; Ramsay and Richards, 1997; Begoray et al., 1998; Martinex and Snider, 2000; Dunn et al., 2004; and British Columbia Ministry of Education, 2004), on the other hand, many researchers indicated that gifted children preferred to learn, study and work in groups (Patricia, 1986, Archambault,etal. 1993 , Lippitt, and et al., 1993 and Hoff, 2003). A third group of researchers indicated that gifted children showed mixed preferences regarding to social context(Riding and Read, 1996, Adams-B, et al.,2004).

With respect to the preferred role for gifted children when working in a group, it was found that most gifted children preferred to be a leader of these groups (Riding and Read, 1996, Hoff,2003, and Adams-Bayer,et al., 2004). Further more, when looking at gifted children for task type and study subjects, it was found that some gifted children preferred closed tasks and specific topics (Riding and Read, 1996, Martinez and Snider, 2000) whereas, some evidence indicated that gifted children preferred open tasks (Hoff, 2003). Additionally, gifted children preferred to study math and science whereas, non- gifted preferred to study physical education(Patricia, 1986).

These confused results related to social context preferences, task type preferences and task outcomes preferences indicated the importance of conducting a new research that focuses on these preferences particularly with Egyptian gifted children.

Research Hypothesis

Based on the above conclusion the research is examining the following hypotheses:

1- Gifted pupils prefer to work individually, leading groups, and they feel confidence when they studying languages; they prefer open tasks to closed tasks, completing tasks in math and science in writing and using diagrams/pictures and maps; process-base-tasks over product-based tasks, and both Knowledge/information learning and skill learning.
2- There are significant differences between gifted pupils and non-gifted pupils in their learning preferences.
3- There are significant differences among different types of giftedness (analytically gifted, practically gifted, and creatively gifted) in their learning preferences.
4- There are significant differences between gifted boys and gifted girls in their learning preferences.

Method

Participants

The participants of this study were third grade preparatory school pupils in Zagazig.

Pilot Sample

64 pupils [12-15 years of age (Mean age=13,52 and SD=0.69)] were chosen from two preparatory schools in order to standardize the materials: Abdalatef Hasanyen girls' school (N=45) and Ahmad Oraby boys' school (N=19). The participants were chosen based on their teacher ratings of their achievement and ability.

Final Sample

The final sample included (176) third grade preparatory school pupils drawn from four preparatory schools in Zagazg City: Abdalatef Hasanyen preparatory school for girls (N=60) and Ahmad Oraby preparatory school for boys (N=23) Zagazig preparatory school for girls (N=48), and Sadat preparatory school

for boys(N=45). Their age are 12-15 years(Mean age= 13,36 and SD= 0.81). These pupils were classified according to their performance on abilities test into six groups: 1- Analytically gifted (n=10); 2- practically gifted (n=14); 3- creatively gifted (n=18); 4-balanced group (which compassed gifted pupils in all three types of abilities, N=33); 5- those who gifted in two type of abilities (n=41); and 6- non- gifted group (n=60).

Materials

First: The Arabic Version of Pupils Learning Preferences Questionnaire (prepared by the researcher)

This questionnaire was constructed (Riding and Read, 1996) to assess pupils learning preferences related to three different areas: Mode of work, social context, and task outcomes. Some questions were extended into two questions. Some questions were modified according to Egyptian culture and classroom practice in schools. There are a total of 12 questions of preferences for the three areas of questionnaire. These areas and the questions related to them are discussed in detail below:

First: Mode of work preferences, was sub-divided into three categories

1- Mode of preference for using materials,

The pupils' question was:

P1- What types of material do you prefer to use: a) Written/text based or b) Diagrams / pictures /maps?

2-Completing tasks mode preference: two questions were used:

P2- When studying languages, how do you prefer to complete tasks :

a) In writting, b) By speaking c) In diagrams/ pictures and maps?

P3- When studying (math and science), how do you prefer to complete tasks: a) In writting, b) By speaking c) In diagrams/ pictures and maps?

Second: Social context preferences

With respect to Social context preferences, there were three sub domains:

1- Group, pair and individual preferences: The pupils' question was:

P4- In what context do you prefer to complete tasks?

a) Within groups of students, b) By yourself, c) With a partner

2- Leading groups

P5- The question to pupils was: do you like leading groups?

A) Yes b) No

Asking and answering questions:

A)- Overall Rating. The pupils' question was:

P6- Do you like asking and answering questions: a) Yes, b) No

B) Asking and answering questions in groups and whole class contexts. The pupils' question was:

P7- Do you like asking/answering questions? a) When the teacher is working with the whole class, or b) When you are part of a smaller group within the class working with the teacher

4- Confidence

The pupils' question was:

P8- Do you feel confident in this subject: a) English and Arabic languages or b) science and math?

Finally Task outcomes

Style of task type

The pupils' question was:

P9 - What sort of tasks do you prefer?

a) Investigative, where you are required to identify rules and ideas,

b) Testing ideas, where you are required to use information to test rules and ideas,

c) Interpreting , where you are required to analyze results and information, and draw conclusions?

2- process or product

The question to pupils was:

P10- What type of tasks do you prefer?

a) Product-based where you are required to complete certain fixed tasks producing a piece of work where the teacher is more interested in the final outcome than how you complete it, such as completing a set of examples or obtaining some information,

b) Process-based, where you are required to discuss and develop idea or use certain strategies where the teacher is more interested in how you complete the task, such as trying out or making up different ways of doing a task?.

3) Open or closed

The pupils' question was:

P11- What types of task do you prefer?

a) Closed, where there is one, correct answer of completing task,

b) Open, where there is a wider range of possible correct/acceptable answers and you are allowed to arrive at these in your own way.

4) Knowledge versus skill

The pupils' question was:

P12- What type of tasks do you prefer?

a) Knowledge/information learning, where you are required to learn facts and information,

b) Skill learning, where you are required to learn how to use or do something?.

Questionnaire validity:

The researcher translated this questionnaire into Arabic language, it was reviewed by two specialists of English language curriculum and teaching methods at Zagazig University.(1) □Some modifications were carried out according to their comments.

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1) - Ahmed Edrees and Mohamed Hasan, department of curriculum and teaching methods(English)

Content validity:

The questionnaire was constructed to measure pupils learning preferences. The content of this questionnaire covers a balanced range of the strategies and methods related to classroom practice characteristics. Although not exahaustive , the area coveres – mode of work, social context and task outcomes- were used in order to recognize the complex range of variables that create the learning context within classrooms (Rinding and Read, 1996,p. 88).

The content of the questionnaire is related to many learning activities which pupils can practice in schools, furthermore it covers many variables of schooling. This is a good indications of content validly of the questionnaire.

Concurrent validity:

The questionnaire was completed by 64 pupils, and 6 teachers of different subjects: Mathematics, science, Arabic language and English language teachers. They were asked to write pupils learning preferences for the 12 questions. The correlations coefficients (Kendal's correlations) between pupils preferences and teachers ratings of these preferences were as follows from question 1 to question 12 respectively: 0.79; 0.77; 0.75; 0.75; 0.36; 0.58; 0.80; 0.81; 0.88; 0.38; 0.77; and 0.56 (all are significant at 0.001). Further, there is a consistency between different teachers in rating students preferences. This is a good evidence of questionnaire validity. Stapa (2003) with 53 students found a high level of consistency between students preferences and teacher ratings of these preferences.

Questionnaire reliability:

There are no indication of the original version questionnaire reliability in literature. In this study reliability of the questionnaire was computed using test re -test method. The researcher administered the questionnaire to (64) preparatory school pupils, drawn from two preparatory school in Zagazig city. After two weeks the questionnaire was administered again to the same group. The correlations between pupils preferences on 12 questions were computed (Kandals correlations). These

correlations are: 0.55; 0.73; 0.82; 0.88; 0.52; 0.75; 0.94; 0.96; 95; 0.90; 0.93; and 0.91 (all correlations are significant at 0.001). This finding indicates to the questionnaire reliability.

Second: Arabic version of Sternberg Triarchic Abilities Test for Children (prepared by the researcher 2004)

The test consists of nine multiple choice subtests that represent a crossing of three kinds of process domains specified by the triarch-theory-analytic, creative and practical-with three major content domains- verbal, quantitative, and figural. The test has nine four-options multiple-choice subtests each comprising four items (Sternberg, 1994). The test takes roughly I 1/2 hours to be administer, which was the maximum time that participating schools wished to allow for testing.(Sternberg, 1994; Sternberg et al. 1996, p.131, and Sternberg, et al., 1999, 5-6). Each ability is assessed by 30 items , ten items in each mode (verbal, quantitative and figural). The evidence for Reliability and validly of the test in United Stats are discussed in Sternberg et al. (1999).

Test Validity.

The test was translated into Arabic and standardize with preparatory school pupils by Khedr (2004). With respect to validity it was computed (with 180 preparatory school pupils) by two ways: Factorial Construct validity for each ability sub test and for the test as whole. The findings revealed that the sub tests(three sub tests in three different modes: verbal, quantitative and figural) of analytical ability loaded on one factor, and fit indices were perfect. In addition the sub tests (three sub tests in three different modes: verbal, quantitative and figural) of practical ability loaded on one factor, and fit indices were perfect. Furthermore, the sub tests (three sub tests in three different modes: verbal, quantitative and figural) of creative ability loaded on one factor, and fit indices were perfect. Finally the nine sub-tests of three abilities were loaded on one latent factor suggesting a general factor of these tests (g factor).

Factorial construct validity

In the current study factorial structure was computed through Confirmatory Factor Analysis of the test to identify the fitness between correlation Matrix and goodness of fit indices.

The researcher performed a confirmatory factor analysis using statistical program which known as LISREL8W on a correlation Matrix of pupils scores on the three sub-tests of abilities. This correlation matrix is shown in the following page.

	Analytical ability	practical ability	creative ability
Analytical ability	1.00		
Practical ability	0.58	1.00	
Creative ability	0.62	0.56	1.00

The Findings of The Confirmatory Factor Analysis are shown in table (1), Lisrel estimated (Maximum likelihood).

Table 1. The Findings of The Confirmatory Factor Analysis

Factor Lodgings on General Factor (G)	T	Significant	Errorvar	R^2 Reliability coefficient)
Analytic Ability= 0.81*G	6.69	0.01	0.35	0.65
Practical Ability=0.72*G	5.95	0.01	0.48	0.52
Creative Ability= 0.77*G	6.36	0.01	0.41	0.59

It can be seen from the table that factor loadings are significant when T belongs to this interval]2,58, 1.96].

R^2 referring to the dimension reliability (Hasan Ezat: 2000, p.26) (all are significant)

The findings showed that CHI-SQUARE with (0) degree of freedom = 0.00 (P = 1.00). Goodness of fit statistic. The Model is Saturated, and the Fit is Perfect. Figure 1 shows path diagram of confirmatory factor analysis of ability tests (one latent factor solution).

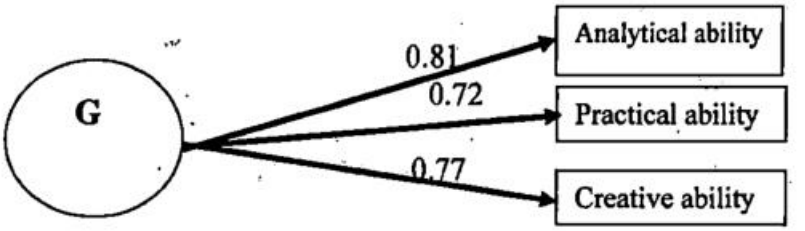

Figure 1. Path diagram for triarchic ability test (one latent factor solution)

It is clear from figure 1 that all abilities loadings are significant.

Test Reliability.

Khedr (2004) computed the test reliability with (180) preparatory school pupils using alpha coefficients for the three subtests and the test as a whole. Alpha coefficients for analytical, practical , creative sub-tests and for the test as a whole were as follows: 0.75; 0.68; 0.75; and 0.86 respectively.

For the purpose of this research, the researcher administered the test to (64) preparatory school pupils (third grad), they completed the three sub-tests. Alpha coefficients for three sub-tests and the test as a whole were as follows: 0.65, 0.40, 0.46, and 0.80.

The confirmatory factor analysis of the test revealed that the reliability coefficients (R^2) of the three sub-tests are: 0.65, 0.52 and 0.56 and all are significant.

Based on the previous evidence it is clear that learning preferences questionnaire and triarchic ability test are valid and reliable.

Procedures

1- After the literature was completed the researcher identified and designed the materials which will be used in this research: learning preferences questionnaire and Sternberg triarchic ability test (Standardized by the researcher, 2004)

2- learning preferences questionnaire was translated and reviewed by two specialists in curriculum and teaching method of English language.
3- The researcher obtained a permission from the authority to conduct this research with preparatory school pupils.
4- The researcher visited the schools and asked the managers of these schools to identify the best classes (according to their academic performance) in the school to participated in this research.
5- The researcher chose a pilot sample (64) from third grad preparatory school pupils in Zagazig city.
6- The researcher standardized the materials with the pilot sample and assessed the validity and reliability. After that he visited the schools to ask about the appropriate time to administer the materials.
7- Learning preferences questionnaire was administered to the participants in different schools. The researcher conducted this task by himself.
8- The participants completed ability test in many seasons. Each season was devoted to a separate class and it takes around one and half hour to answer the test.
9- The questionnaire and the test were marked and pupils preferences and scores on the three sub-tests of ability were recorded and entered to SPSS program for the analysis.
10- Pupils' scores on each ability test (three ability sub-tests) were ranked from minimum score to maximum scores, these scores were divided into seven parts according to seven-folds. Pupils scores on the first, second and third were coded as 2 (non-gifted), whereas, pupils scores on fifth, sixth, and seventh-folds were coded as 1(Gifted pupils). These pupils were classified according to their ability test performance into six groups: 1- Analytically gifted (their scores on analytical ability test is higher than their scores on the other two abilities' tests), 2- practically gifted (their scores on practical ability test are higher than their scores on the other abilities' tests, 3- creatively gifted (their scores on creative

ability test are higher than their scores on the other two abilities tests), 4-balanced group (which compassed gifted pupils in three different types of abilities), 5- those who are gifted in two types of abilities and 6- non- gifted group.

Results and discussions

Learning preferences of gifted pupils

To test the first hypothesis, which states that *Gifted pupils prefer working individually, leading groups, and they feel confidence when studying languages; they prefer open tasks to closed tasks, completing tasks in math and science in writing and using diagrams/pictures and maps; process-base-tasks over product-based tasks, and both Knowledge/information learning and skill learning.*

To test this hypotheses the researcher computed the frequencies of gifted pupils for each choice of preferences in different preferences questions and used Chi-Squire to identify the preferences of gifted pupils, table 2 shows the results of Chi-Square and table 3 shows the frequencies of gifted pupils preferences on each question.

Mode of work preferences

The findings indicated that There are no clear difference between different modes of learning materials in general, (Chi-Square = 0.273 and at 2 degree of freedom p= 0.602). For mode of Work, table 2 and table 3 show this finding.

Table (2). Chi-Squire results for Gifted pupils mode of work preferences

	P1	P2	P3
Chi-square	0.273	0.182	10.364
Degree of freedom	1	2	2
Significant	0.602	0.913	0.006

With respect to complete mathematics tasks preference, the findings indicated that there is a significant difference between gifted pupils who preferred to complete mathematics' tasks (Chi-Square= 10.364 at and 2 degree of freedom p= 0.006). The majority of gifted pupils preferred to complete mathematics' tasks in writing [18 (54,5%) out of 33 gifted pupils preferred this

mode], Whereas 12 (36,4%) out of 33 gifted pupils preferred to complete mathematics tasks in diagrams/pictures/maps. The least preferred mode is completing tasks in speaking (orally), 3 (9,1%) out of 33 pupils preferred this mode. In studying languages (Arabic and English), there is a balance in gifted pupils preferences.

Table (3). Gifted preferences for Mode of Work.

Preferences questions	Gifted preferences frequencies	percentage
Type of learning materials P1- What type of learning materials do you prefer?		
a) Written/text based	15	45,5%
b) Diagrams/pictures/maps	18	54,5%
Total	33	100%
P2- Completing tasks mode preferences in languages(Arabic and English)		
a) In writing	12	36,4%
b) Speaking	11	33,3%
c) In Diagrams/Pictures /maps	10	30,3%
Total	33	100%
P3- completing tasks mode preferences (In math and science)		
d) writing	18	54,5%
e) Speaking	3	9,1%
f) In Diagrams/Pictures /maps	12	36,4%
Total	33	100

This finding is likely to be due to the nature of mathematics learning materials. These materials are often presented to students in writing in addition to diagrams, pictures. Unexpectedly, there is no differences in pupils preferences of completing tasks in Arabic and English languages subjects. These findings are consistent with the findings of Riding and Read(1996), who found that high ability pupils preferred diagrams/pictures/ and Maps in-addition to Writing mode of presentations, this support the evidence that gifted pupils are imaginative.

Social context preferences

Chi-Square test was used within social context preferences, and the findings indicated that there are no significant difference between gifted pupils preference according to (group, pair or individual work preferences) (Chi-Square=3.455 at 2 df and P= 0.178), but it is clear from table 5 that gifted pupils do not prefer to complete tasks in pair, instead (42%) of gifted pupils tend to work individually and (39.14%) in groups.

This finding is due to mixed choices of gifted pupils to mode of work, either individually or in groups. This finding provides further support for the findings of Riding and Read(1996) and Adams-Byers(2004), who found out that gifted children showed mixed preferences regarding social context.

The findings indicated that gifted pupils preferred to lead groups (Chi-Square= 18.939, df=1 and it is significant at 0.001). 29 (87,9%) out of 33 gifted pupils preferred to lead groups of pupils. This finding is due to gifted children characteristics, they usually looking for leading groups, *they are the creators and the leaders of the next generation* (Gallagher, 1975,p.9). this finding is consistence with the findings of Hoff, (2003), and Adams-Bayer et al., (2004).

Table 4. gifted students preferences for social context

	P4	P5	P6	P7	P8
Chi-square	3.455	18.939	5.121	0.030	6.818
Degree of freedom	2	1	1	1	1
Significant	0.006	0.000	0.024	0.862	0.009

Further, the findings showed that for overall rating, gifted children preferred to ask and answer questions (Chi-Square=5.121, df=1 and significant=0.024). Table 4 shows his finding. Table 5 shows that 23 (69,7%) gifted pupils out of 33 preferred to ask and answer questions in classroom.

This finding interprets the tendency of gifted pupils to interact effectively with their teachers and their classmates. They prefer to share in different discussions at school and classrooms. This finding support the evidence which suggested by the findings of Carney (1985) and British Columbia Ministry of Education

(2004). These researchers found that gifted children preferred discussions, asking and answering questions and accepting challenges.

Table 5. Frequencies of social contexts preferences for gifted children

Preferences questions and answers for social context	Gifted preferences frequencies	percentage
Group, pair and individual preference		
P4- In what context do you prefer to complete tasks?		
a) Within groups of pupils	13	39,4%
b) By myself	14	42,4%
c) With a partner	6	18,2%
Total	**33**	**100%**
P5- Leading groups. Do you like leading groups?		
a) Yes	29	87,9%
b) No	4	12,1%
Total	**33**	**100%**
P6- Asking and answering questions		
Do you like asking and answering questions?		
a) Yes	23	69,7%
b) No	10	30,3%
Total	**33**	**100%**
P7- Asking and answering questions in groups and in whole class contexts.		
Do you like asking and answering questions?		
a) When the teacher is working with the whole class	16	48,5%
b) When you are part of a smaller group within the class working with the teacher	17	51,5%
Total	**33**	**100%**
P8- Confidence		
Do you feel confident in this subject		
a) Scientific subjects(Math and science)	9	27,3%
b) Languages and social studies	24	72,7%
Total	**33**	**100%**

The findings indicated that gifted pupils feel confident when they are studying literature learning materials such as languages and social studies rather than when studying scientific materials such as math and science (Chi-Square =6.818, df=1 and

P=0.009), table 4 shows this finding and table 5 shows that 24 (72,7%) out of 33 gifted pupils feel confidence when they are learning literature, languages and social studies.

May be, gifted pupils prefer to study languages and social studies more than mathematics and science , particularly in this age. This finding needs further investigation in different subjects and different learning stages.

Task outcomes

The findings indicated that there is a hint significant differences between gifted pupils preferences for product-based tasks or process-based tasks(Chi-Square=3.667,df=1, p=0.056). Gifted pupils preferred process-based tasks to product-based tasks. Table 6 shows this finding and table 7 shows that 22 (66,7%) out of 33 gifted pupils preferred process-based tasks. This finding is likely to attribute to gifted pupils. tendency to focus on different process in each task and problem which he or she engaged in. This evidence is consistent with previous findings (Riding and Read, 1996), which reveled that high ability pupils are more process-oriented learners.

Table 6. Chi-Square for gifted students preferences for task outcomes

	P9	P10	P11	P12
Chi-square	3.818	3.667	16.030	0.273
Degree of freedom	2	1	1	1
Significant	0.148	0.056	0.000	0.602

Further, the findings shows that gifted children preferred open tasks to closed ones (Chi-Square=16.030,df=1, p=0.000). Table 7 shows that 28 (84,8%) out of 33 gifted pupils preferred Open tasks, where there is a wider range of possible correct/acceptable answers. Whereas, 5 pupils chose closed tasks. This may be due to the fact that gifted pupils prefer to use their own ideas and produce different correct and acceptable answers to the same question or problem. These open tasks allow gifted pupils to use several methods to achieve the same goal.

Additionally, table 6 shows that gifted pupils prefer both knowledge/information learning, where they are required to learn

facts and information, in addition to skill learning , where they are required to learn how to use or do something. There are no significant difference between their choices (Chi-Square=0.273, df=1 and P=0.602). Table 6 shows this finding and table 7 shows frequencies of gifted pupils for each preferences. This finding could be attributed to the tendency of gifted pupils to perceive the importance of both knowledge/information learning and skill learning because the former one is essential for the later.

Table 7. Frequencies and percentages of task outcomes preferences for gifted children

Gifted students preferences	Gifted preferences frequencies	Percent %
P9- Style of task type, the question was: What sort of tasks do you prefer?		
a) Investigative, where you are required to identify rules and ideas	7	21,2%
b) Testing ideas, where you are required to use information to test rules and idea	10	30,3%
c) Interpreting, where you are required to analyze results and information, and draw conclusions.	16	48,5%
Total.	33	100%
P10- Process or product, the question was: What type of tasks do you prefer?		
a) Product-based where you are required to complete certain fixed tasks producing a piece of work where the teacher is more interested in the final outcomes than how you complete it, such as completing a set of examples or obtaining some information	11	33,3%
b) Process-based, where you are required to discuss and develop ideas or use certain strategies, where the teacher is more interested in how you complete the task, such as trying out or making up different ways of doing a task.	22	66,7%
Total	33	100%

Gifted students preferences	Gifted preferences frequencies	Percent %
P11- Open or closed, the question was: What type of tasks do you prefer?		
a) Closed where there is one ,or a restricted range, of correct answers and ways you must complete the task,	5	15,2%
b) Open, where there is a wider range of possible correct/acceptable answers and you are allowed to arrived at these in your own way.	28	84,8%
Total	33	100%
P12- Knowledge versus skill the question was: What type of tasks do you prefer?		
a) Knowledge/information learning, where you are required to learn facts and information.	18	54,5%
b) Skill learning , where you are required to learn how to use or do something.	15	45,5%
Total	33	100%

The differences between gifted and non gifted pupils in learning preferences

To test the second hypotheses which states that *There are significant differences between gifted pupils and non-gifted pupils in their learning preferences.* Chi-Square tests were computed and the findings indicated that , **For mode of learning materials,** 1- There is a significant difference between gifted children and non gifted children according to their preference of completing tasks and work in language subjects (Arabic and English), (Chi-Square= 5.999, df=2 , sign=0.05). Table (8) shows this finding. Non gifted children preferred to complete tasks and work in Arabic and English subjects in writing, whereas, gifted children preferred to use diagrams/pictures and maps. There is no difference in using spiking in completing tasks in these subjects. Table 10 and table (9) show this finding.

The current finding may be interpreted in terms of gifted pupils characteristics. These children preferred imaginative styles, and presenting learning materials in diagrams, picture and maps allow these kids to employ their imaginative and achieve

higher scores in these subjects. This finding is somewhat consistent with previous findings (Thomas et al.,2000). There were no significant differences between gifted and non-gifted children in other mode of work preferences.

Table (8). Chi-Square tests for mode of work in Languages learning material preference(P2)

	Value	df	Asymp.sig(2-sided)
Pearson Chi-Square	5.999	2	0.050
Continuity correction	6.105	2	0.047
Likelihood Ratio Fisher's Exact test	5.796	1	0.016
N of valid cases	73		

Table (9)- Frequencies of gifted and non-gifted pupils mode of work preferences

	Gifted	Non-Gifted	Total
Mode of work P2- Completing tasks mode preferences in languages (Arabic and English)			
g) In writing	12	24	36
h) Speaking	11	12	23
i) In Diagrams/Pictures /maps	10	4	14
Total	33	40	73

For social context learning preferences, the findings indicated that there is a hint significant difference between gifted and non-gifted children in preferences for social context. (Chi-Square= 5.869, df=2, sig=0.053). Table (10) show this finding. The majority of gifted pupils preferred to work in groups. whereas, non-gifted pupils preferred to work in pairs. Both gifted and non gifted students preferred to work individually. This finding is consistent in a large part with the findings of patricia, (1986); Archambault, et al. (1993); Lippitt, and others (1993); Ramsay & Richards (1997) and Hoff,(2003), Which indicated that gifted children prefer to work in groups.

Table (10). Chi-Square tests for mod of Languages learning material preference (P4).

	Value	df	Asymp.sig (2-sided)
Pearson Chi-Square	5.869	2	0.053
Continuity correction	6.047	2	0.049
Likelihood Ratio Fisher's Exact test	5.661	1	0.017

Table (11) shows frequencies and percentage of gifted and non-gifted pupils for social context.

Table (11)- Frequencies of gifted and non-gifted pupils preferences for social context

	Gifted	Non-Gifted	Total
Social context **P4-** In any context do you prefer to complete tasks ?			
a) In group	13	8	21
b) Individually	14	15	29
c) In pair	6	17	23
Total	33	40	73

In addition, the findings indicated that, there are significant differences between gifted and non-gifted pupils in confidence feeling preferences (Chi-Square= 7.819,df=1 and signi.=0.005), table (12) shows this finding. There are no significant difference between gifted and non gifted for other social context preferences.

Table (12). Chi-Square tests for confidence preferences (P8)

	Value	df	Asymp.sig(2-sided)	Exact significant(2 Side)
Pearson Chi-Square	7.819	1	0.005	
Continuity correction	6.553	1	0.010	
Likelihood Ratio Fisher's Exact test	8.013	1	0.005	0.009
Linear by linear association	7.712	1	0.005	
N of valid cases	73			

Table (13) shows that Gifted pupils feel confident when they are studying social studies and languages (Arabic and English). Whereas, non gifted pupils feel confident when they are studying math and science.

Table (13)- Frequencies of gifted and non-gifted pupils preferences confidence

	Gifted	Non-Gifted	Total
Social context: confidence P8- do you feel confident when studying			
a) Scientific subjects (math and science)	9	24	33
b) Litterateur (languages and social studies)	24	16	40
Total	33	40	73

For task outcome , the findings indicated that, there is a significant difference between gifted and non-gifted pupils in Knowledge versus skill preferences (Chi-Square= 4.500,df=1 and P=0.034). Table (14) show this finding.

Table (14). Chi-Square tests for Knowledge Versus Skill preferences (P12)

	Value	df	Asymp.sig(2-sided)
Pearson Chi-Square	4.500	1	0.034
Continuity correction	3.544	1	0.060
Likelihood Ratio Fisher's Exact test	4.528	1	0.033
Linear by linear association	4.439	1	0.035
N of valid cases	73		

Table (15) shows that Gifted pupils preferred Knowledge/information learning, where they are required to learn facts and information, whereas, non-gifted pupils preferred Skill learning, where they are required to learn how to use or do something. The first part of this finding was unexpected. The majority of non-gifted children preferred skill learning to

knowledge/information learning. This finding is inconsistent with Riding and Read (1996) finding, who found that there is no effect of ability on test type of preferences. The current finding is consistent to some extent with the findings of Thomas, et al. (2000) who indicated that non-gifted children preferred practical styles of learning which required them to learn how to use or do something. More research is needed according to this findings since there is insufficient research in this field.

Table (15)- Frequencies of gifted and non-gifted pupils preferences for Knowledge Versus Skill (P12).

	Gifted pupils	Non-Gifted	Total
Knowledge Versus Skill **P12-** What type of tasks do you prefer?			
a) Knowledge/information learning where you are required to learn facts and information	18	12	30
b) Skill learning, where you are required to learn how to use or do something	15	28	43
Total	33	40	73

The differences between different types of mentally gifted children

To test the third hypothesis which states that *"There are significant differences between different types of mentally gifted children(analytically gifted, practically gifted, and creatively gifted) in their learning preferences"*. The researcher used K independent sample (Kruskal Wallis Test). The findings indicated that Chi-Square was insignificant for all preference questions, this means that there are no significant differences among different groups of mentally giftedness in different aspects of learning preferences. Further investigation is needed according to this point.

The differences between gifted boys and gifted girls in learning preferences

To test the third hypothesis which states that *"There are significant differences between gifted boys and gifted girls in their learning preferences.* The researcher used Chi-Square tests for all preference questions. The findings indicated that there is a significant difference between gifted boys and gifted girls in asking and answering questions preference in the classroom (Pearson Chi-Square= 5.705, df=1 and Exact.sign. =0.026). Table (16) shows this finding.

Table (16). Chi-Square tests for asking and answering questions for gifted boys and gifted girls.

	Value	Df	Asymp.sig(2-sided)	Exact Sig. (2 sided)
Pearson Chi-Square	5.705	1	0.017	
Continuity correction	4.039	1	0.044	
Likelihood Ratio Fisher's Exact test	5.989	1	0.014	0.026
Linear-by-linear association	5.532	1	0.019	
N of Valid Cases	33			

Tables (16) and (17) show that gifted girls preferred to ask and answer questions individually in a small group working with the teacher in the classroom. On the other hand, gifted boys preferred to ask and answer questions when the teacher is working with the whole class.

Table (17)- Frequencies of gifted boys and gifted girls preferences

	Gifted boys	Gifted girls	Total
P7- Asking and answering questions in groups and whole class contexts. Do you like asking and answering questions?			
c) When the teacher is working with the whole class	8	8	16
d) When you are part of a smaller group within the class working with the teacher	2	15	17
Total	**10**	**23**	**33**

This finding may be attributed to the differences between gifted boys and gifted girls in their personality traits. Gifted boys may be more extrovert than gifted girls.

The current evidence revealed in this part is consistent partially with the findings of Dunn et al. (2004); and generally with Hoff (2003) who found that gifted pupils preferred to learn and to work in groups, or with intellectual peers(British Columbia Ministry of Education report, 2004).

The other differences between gifted boys and gifted girls were insignificant. Further research is needed to clarify gender difference of gifted pupils in learning preferences, particularly with different stages of educational system.

Conclusion and Recommendations.

This study aimed to identify learning preferences that characterize the third grade preparatory school gifted pupils, It has found that third grade preparatory school gifted pupils preferred to complete mathematics tasks in writing, diagrams pictures and maps not in spiking, with respect to social context. It was found that gifted pupils preferred to study and work individually by themselves and in groups, but not in pairs. These children preferred to be a leaders of their groups. Further, they like to ask and answer questions in the classroom and interact with their classmates and teachers, and participate in discussions. Additionally, gifted children feel confident when they are studying languages and social science rather than when studying math and science.

According to task outcomes, the findings revealed that gifted pupils preferred process-based tasks to closed tasks. There are no differences between gifted pupils preferences for Knowledge/information learning and skill learning.

With respect to gender, it was found that, gifted girls preferred to ask and answer questions when they are individual in small group working with the teacher in the classroom, whereas, gifted boys preferred to ask and answer questions when the teacher is working with whole class.

When the aim was to compare gifted and non gifted pupils preferences, the findings indicated that non gifted pupils preferred to complete tasks and study languages (Arabic and English) in writing, whereas, gifted pupils preferred to use diagrams pictures and maps. This finding reflects the characteristics of gifted and non-gifted children. With respect to social context, the findings indicated that non- gifted children preferred to study and work in pairs, whereas, gifted preferred to study and work in groups or individually. Gifted children feel confident when they are studying languages and social studies. By contrast, non-gifted children feel confident when they are studying math and science. This finding reflects the natures of each school subjects and learners preferences of each subject. Finally, gifted children preferred knowledge/information learning, where they are required to learn facts and information. On the other hand, non-gifted preferred skill learning where they are required to learn how to use or do something. These findings have many implications for schools, teachers and educators. There are some suggestions according to the findings of this study and literature could help in improving and reforming gifted education. These are summarized below:

Gifted children should be given the chance to go ahead and work at higher levels on their own, Gifted pupils need the chance to work with others in school and in classroom. Therefore, Classroom practices should give a wide opportunity to social interactions in schools and classroom. Nevertheless, individual work must not be ignored. Classroom and school practices should encourage challenge for gifted children, and provide independent study opportunities in addition to group work. Teachers should offer learning through a balanced range of strategies and methods, over time, as is required within most of the school curriculum.

Learning material could be more useful for gifted and non-gifted when they are presented in different modes of presentation. Classroom organizations and the design of gifted learners' tasks need to be reconstructed. Wide variety of tasks should be

employed in classroom. Finally , learning preferences of children in general and gifted children in particular should be taken in account when, writing curriculum, design schools and classroom practices, assessment and evaluation styles and approaches and Social interactions. Further research of gifted children learning preferences is needed, in different learning stages, particularly in primary schools and nurseries. Her are some questions which need answers:

1- What are the learning preferences of gifted students in secondary education and university?.
2- Are their any significant differences between different types of giftedness in learning preferences and thinking styles?.
3- Are their any significant effects of the interactions between learners gender, learning preferences, and assessment approach on achievement of gifted learners?.
4- Are their any significant differences in learning preferences of gifted learners in homogenous and heterogeneous groups?.

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تفضيلات التعلم المميزة للتلاميذ المصريين الموهوبين بالصف الثالث الإعدادي بمدينة الزقازيق

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ملخص الدراسة :

تتمثل أهداف البحث الحالي في تحديد تفضيلات التعلم المميزة للتلاميذ الموهوبين بالصف الثالث الإعدادي بمدينة الزقازيق، وبحث الفروق بين التلاميذ الموهوبين والتلاميذ العاديين في تفضيلات التعلم ، وتحديد الفروق بين التلاميذ الموهوبين والتلميذات الموهوبات في تفضيلات التعلم، وذلك لدى عينة قوامها (١٧٦) تلميذاً وتلميذة تم اختيارهم من أربع مدارس إعدادية بمدينة الزقازيق بناء على مستواهم التحصيلي وتقديرات المعلم. أجاب التلاميذ على اختبارات القدرات العقلية الثلاثية لاسترنبرج (ترجمة وتعريب وتقنين الباحث) ، والتي تقيس القدرات التحليلية والعملية والابتكارية. وتم تصنيف التلاميذ بناء على درجاتهم على هذه الاختبارات إلى ست مجموعات: الموهوبين عملياً(ن=١٤)، والموهوبين تحليلياً(ن=١٠) والموهوبين ابتكارياً(ن=١٨)، والمجموعة المتوازنة (ن=٣٣) (وتشير إلى التلاميذ الموهوبين في القدرات الثلاث معاً). ومجموعة الموهوبين في جانبين فقط (ن=٤١) ومجموعة العاديين(ن=٤٠). أكملت جميع المجموعات قائمة تفضيلات التعلم لريدنج (ترجمة وتعريب وتقنين الباحث)، والذي يقيس تفضيلات التعلم في ثلاثة مجالات: وهى نوع المهامه والسياق الاجتماعي للتعلم، ونتيجة المهامه. وباستخدام اختبار" كا٢" واختبار "كروسال ويلز" توصل الباحث إلى عدم وجود فروق دالة إحصائياً بين الموهوبين تحليلياً والموهوبين ابتكارياً والموهوبين عملياً في تفضيلات التعلم. ووجد أن مجموعة التلاميذ الموهوبين في الجوانب الثلاثة معاً فضلوا أن يكملوا المهام في مادة الرياضيات كتابة وباستخدام الصور والرسوم التوضيحية والخرائط وليس تحدثاً. وبالنسبة للسياق الاجتماعي فان التلاميذ الموهوبين يفضلون التعلم بصورة فردية بأنفسهم وفى مجموعات وليس في أزواج. وقد فضل هؤلاء التلاميذ أيضاً أن يكونوا قادة لمجموعاتهم، علاوة على

ذلك فإنهم يفضلون طرح الأسئلة والإجابة علي الأسئلة في حجرة الدراسة. وبالنسبة لنتيجة المهامة فان التلاميذ الموهوبين فضلوا المهام القائمة على العمليات عن تلك المهام التي تركز على النتيجة النهائية. كما وجد أن البنات الموهوبات قد فضلن طرح الأسئلة أو الإجابة عن الأسئلة عندما يكن أفراد في مجموعات صغيرة يعملن مع المعلم داخل حجرة الدراسة. بينما يفضل البنين الموهوبين طرح الأسئلة و الإجابة على الأسئلة عندما يعمل المعلم مع جميع التلاميذ في حجرة الدراسة. كما توصل الباحث أيضاً إلى وجود فروق دالة إحصائياً بين التلاميذ الموهوبين وغير الموهوبين في تفضيلات التعلم. وتم تفسير النتائج ومناقشتها في ضوء أدب البحث، كما تم تقديم مجموعة من التوصيات والبحوث المقترحة.