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Running head: THE PARTICULAR VALUE OF MENTORSHIPS

The Particular Value of Mentorships for Gifted Students

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May, 1997

A thesis submitted to the Faculty of Graduate Studies and

Research in partial fulfillment of the requirements

of the Degree of Master of Arts in

**Educational Psychology** 

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#### Abstract

The claim that mentorships are particularly appropriate and in some ways unique educational experiences for high ability students was empirically tested. Students who had and had not taken part in a gifted, creative, or enrichment program ( $\underline{n} = 39$ ) completed a questionnaire that consisted of scenarios and statements addressing mentees' vocational and psychosocial needs. Of particular interest were the factor analyses generated from students' responses to the direct statements. As predicted, the high ability group preferred mentorships addressing psychosocial needs to those addressing vocational ones. All five psychosocial items loaded on factor 1, while nine of the 11 vocational items loaded on factor 2. For students who had not participated in a program for high ability pupils, a combination of vocational and psychosocial items loaded on factors 1 and 2. This suggested that these students shared a more general preference for mentoring relationships regardless of whether they addressed vocational or psychosocial needs.

#### Résumé

L'hypothèse voulant que le mentorat soit pour les étudiants très doués l'occasion d'une expérience pédagogique utile et dans certains cas exceptionnelle a été soumise à une vérification empirique. Deux groupes d'étudiants (n = 39), dont l'un avait pris part à un programme pour élèves doués, un programme d'enseignement axé sur la créativité ou un programme d'enrichissement, et l'autre pas, ont rempli un auestionnaire constitué de scénarios et d'énoncés portant sur leurs besoins professionnels et psychosociaux. Les résultats de l'analyse factorielle à laquelle ont été soumises les réponses des étudiants sont particulièrement intéressants. Comme prévu, le groupe très doué a préféré les mentors qui s'intéressent aux besoins psychosociaux des étudiants plutôt qu'à leurs besoins professionnels. Les cinq éléments psychosociaux ont présenté une saturation à l'égard du facteur 1, tandis que neuf des onze éléments professionnels ont présenté une saturation à l'égard du facteur 2. Dans le groupe qui n'avait pas pris part à un programme pour élèves doués, une combinaison d'éléments professionnels et psychosociaux a présenté une saturation à l'égard des facteurs 1 et 2. Il semble donc que ces étudiants aient généralement montré une préférence pour la relation avec leur mentor, sans égard au fait que ce dernier s'intéresse à leurs besoins professionnels ou psychosociaux.

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#### CHAPTER 1

#### **REVIEW OF THE LITERATURE**

Biographical accounts, self-reports, and interviews with gifted and talented persons have frequently paid tribute to the significant role that mentors often play in their personal growth and vocational success (e.g., Bloom, 1985; Feldman, 1986; Goertzel, Goertzel, & Goertzel, 1978; Kaufmann, Harrel, Milam, Woolverton, & Miller, 1986). In light of such reports and educators' searches to identify appropriate educational experiences for gifted students, many schools have integrated mentorships into their gifted and talented programs in which experts from various fields share their knowledge with less experienced students. Although gifted mentees appear to benefit from such experiences, most studies on mentoring have not used control groups. Furthermore, it remains unclear whether or not mentorship programs offer uniquely appropriate educational experiences for gifted students, or if they provide appropriate experiences for all students including the gifted (cf. Shore, Cornell, Robinson, & Ward, 1991). Although researchers have argued that mentorships are especially suitable for gifted students (cf. Clasen & Hanson, 1987; Runions & Smyth, 1985a; Zorman, 1993), empirical research in support of this claim is almost never presented. For this reason, the present study will identify cognitive, vocational, social, and affective characteristics and needs of the gifted which indicate how mentorships are particularly appropriate for gifted students and serve qualitatively different functions for gifted versus nongifted students. Only when this question is addressed can researchers recommend mentorship programs as viable options for educating gifted students in particular, rather than as an educational tool for all learners.

#### The History of Mentoring

The term mentor appears to have originated from Homer's *Odyssey* (Comer, 1989; Porter, 1991). Before embarking on his ten year journey, Ulysses entrusted the education and care of his son to his wise friend, Mentor. Thereafter, Mentor's name came to signify highly respected and wise teachers who provided intellectual and emotional counsel to younger individuals. The act of "mentoring" is said to have begun with Greek philosophers such as Socrates who acted as a mentor to Plato, Plato to Aristotle, and Aristotle to Alexander the Great (Cox, Daniel, & Boston, 1985). Eventually mentoring was institutionalized within medieval colleges such as Oxford and Cambridge, where it was regarded as an essential component of a sound education from the sixteenth century onward (Kearney, 1970).

Today, the concept of mentoring similarly refers to a learning partnership between two or more individuals who wish to share and develop a mutual interest (Runions & Smyth, 1985b). The mentor (typically an adult) acts as a guide, role model, teacher, and friend to a less experienced and often younger protégé or mentee. Mentoring relationships, generally known as mentorships, can be found in the literature of various domains including business and education. While the concept of mentoring in business has focused on career development and advancement, a broader conception of mentoring has evolved within education (Beck, 1989). A mentor is expected to provide vocational, intellectual, and psychosocial support. To this extent, the educator's definition of mentoring is more closely aligned with its original meaning. Unlike the internship experience which strictly provides a window into the inner workings of a profession, mentorships are also characterized by a special bond between the mentor and the protégé (Hellerman, 1994). Pleiss and Feldhusen (1995) emphasized this point by drawing a distinction between mentors, role models, and heroes, with mentorships representing the most intense and interactive relationship among the three. Other authors have gone so far as to

designate mentors as either life mentors (persons who guide the protégé not only throughout their career, but also throughout life) or career mentors (persons who only provide guidance regarding a protégé's vocational development) (Dodgson, 1986). Perhaps Boston (1976) defined the mentor most eloquently when stating that in addition to acting as a dispenser of knowledge, mentors attempt to share their world view and values with protégés. These ideas and beliefs are disclosed in an effort to encourage protégés to begin molding their own world view, which may or may not reflect that which is espoused by the mentor (Moore, 1982). Boston (1976) wrote: "what the mentor models is himself; what the pupil must imitate is not the mentor's techniques but the vision of what he himself might become" (p. 20).

#### Mentoring in the Domain of Education

Research indicates that mentorship programs have been severely underutilized in education (Kleine & Webb, 1992). Few students report having had a mentor prior to the graduate level of education (Boyer, 1987; Jacobi, 1989, cited in Jacobi, 1991). Within the last decade, however, hundreds of books, articles, and reports have been published on mentoring (cf. Gladstone, 1987; Shaughnessy & Neely, 1991). Mentorship programs have gained recognition in various parts of the United States and Canada. Educators' and researchers' growing interest in mentoring programs has been influenced by numerous factors (Reilly, 1992). One of the most influential has been the business sector's dissatisfaction with the skills and knowledge of youth entering the workforce. In response to this problem, there has been an explosion of community networking, with mentorship programs being one of the most promising educational interventions (Runions & Smyth, 1985b). An increasing number of educators and business professionals now acknowledge that they share a similar interest, namely, enhancing the quality of education. Furthermore, the notion that educators should consider students' psychosocial well-being, in addition to their intellectual and vocational development, has prompted educators to recognize the potential of mentorship programs (Haensly, 1989). Researchers argue that in an age in which children are spending more of their time with peers, mentorships provide an opportunity for students to interact meaningfully with adults (Nash, Haensly, Scobee, & Wright, 1992). For such reasons, business persons, professionals, artists, parents, teachers, senior citizens, and students have been among the many community members asked to become mentors (<u>Gifted Mentor Handbook</u>, 1980). <u>Mentorships as Unique Educational Experiences for Gifted and Talented Students</u>

The literature on mentoring in education suggests that while valuable in general for all learners, mentorships appear particularly promising for gifted students (cf. Clasen & Hanson, 1987; Runions & Smyth, 1985a; Zorman, 1993). Biographical reports, self-reports, and interviews indicate that mentors exert one of the most significant influences on gifted individuals' personal and vocational success. Goertzel, Goertzel, & Goertzel (1978) identified the presence of an influential one-toone relationship in the lives of 300 eminent men and women. Equally, Feldman (1986) and Bloom (1985) noted the critical role which mentors played in the development of children with exceptional talents. Gifted students' thirst for knowledge may provide one explanation of why mentors play an instrumental role in their students' lives. Finding a mentor who challenges one to explore an interest may provide the stimulation otherwise absent in a student's classroom experience. Many gifted students need to work at an accelerated pace and more in depth than what is provided by the regular curriculum (Christie, 1995). Although some gifted students continue to thrive in a regular classroom, evidence indicates that many gifted learners grow frustrated and bored, and do not achieve to their fullest potential (Ambrose, Allen, & Huntley, 1994). In fact, it has been estimated that at least fifty percent of the gifted are underachievers (Worcester, 1981).

#### The Contribution of Mentorships to Gifted Students' Vocational Development

Shore et al. (1991) reported that there has been broad agreement on the need for career education for the gifted. Milgram (1991) suggested that the content of vocational programs for gifted students should be qualitatively different, addressing why people work, what types of benefits are related to different careers, and what moral issues are associated with certain careers. It is also suggested that gifted students have an opportunity to learn about the lifestyles associated with various occupations. Milgram (1991) stated: "the implications of intense efforts to fulfill high aspirations and realize remarkable abilities may exacerbate these work-leisure conflicts, especially in gifted and talented individuals" (p. 129). The gifted must be also informed of the intensive personal, financial, and academic commitments associated with professional careers--the type of careers often pursued by this student population. The pursuit of such careers often prolong the attainment of financial independence and prevent one from immediately marrying and having children (Kerr, 1981).

Kerr (1986) asserted, however, that gifted young persons may have few opportunities to discuss decisions regarding career choices: "The combination of multipotentiality, extended formal instruction, expectations of others, and a limited opportunity for true peer discussions can easily justify special attention by a counselor" (p. 279). Kerr (1981) noted that gifted students' special needs for career counseling are often overlooked by school personnel who do not feel they need assistance. Furthermore, gifted students experience unique difficulties concerning what vocations are suitable for their abilities or talents (Colangelo, 1991). Kerr and Colangelo (1988) found that those students who scored highest on the American College Testing (ACT) instrument had a limited conception of their vocational options. Engineering, medicine, and law were the choices most often cited. According to these authors, such findings suggest that gifted students are swayed toward high status occupations. For example, some students whose primary interests rested in the humanities pursued studies in engineering.

Research indicates that both formal and informal mentoring experiences can provide opportunities for gifted students to explore career options (i.e., Bloom, 1985; Christie, 1995). Mentors are in the position to discuss the lifestyle and educational requirements associated with a career, in addition to helping gifted students determine if they have the necessary skills. Furthermore, mentorship programs often provide a link between school and the work environment (Kleine & Webb, 1992). It is this link which might finally provide the incentive for gifted students to apply themselves within the classroom. For instance, Reilly (1992) cited the example of a student who discovered the usefulness of algebra as she observed veterinarians reconstruct a tail for a peregrine falcon.

#### The Contribution of Mentorships to Gifted Students' Cognitive Development

During the 1970s, cognitive psychologists adopted the information processing and the expert-novice distinction as models for studying intelligence. Subsequently, researchers interested in giftedness proposed that such models could also be used to understand high ability (e.g., Shore, 1982; Sternberg, 1981), and that gifted performance resembled expert performance in several ways (e.g., Coleman & Shore, 1991). Shore (in press), for instance, summarized several studies which suggest that gifted children's thinking processes qualitatively differ from those of nongifted children at the preschool, elementary, and secondary school levels. Among the preschool studies reviewed by Shore (in press), able preschoolers demonstrated superior perspective taking (cf. Tarshis & Shore, 1991); some transfer performance which surpassed that of their chronological peers and which was unmatched by older children with similar mental ages (cf. Kanevsky, 1990, 1992); and metacognitive performance in the form of self-correcting and self-monitoring (cf. Moss, 1983, 1990; Shore, Coleman, & Moss, 1992). At the elementary school age level, metacognition and flexibility were again evident among able children (cf. Dover & Shore, 1991). In fact, flexible gifted children displayed greater metacognitive knowledge than inflexible gifted children. In addition, a preference for complexity (cf. Maniatis, 1983), use of a plan (cf. Bowen, Shore, & Cartwright, 1992) and accuracy in performance were characteristic of high ability children (cf. Lajoie & Shore, 1986, 1987; Shore, Koller, & Dover, 1994).

Among the secondary school studies reviewed by Shore (in press), the use of metacognitive strategies remained characteristic of gifted students. For instance, Coleman & Shore (1991) found that able high school students performed differently than average performers on physics problems and, furthermore, their performance was more closely aligned with that of experts. In particular, high performers correctly monitored and evaluated their own problem-solving strategies and made reference to prior knowledge (knowledge which is not part of the problem). In contrast, average performers did not monitor their own problem-solving processes accurately and tended to focus on the information presented in the problem, rather than attempting to integrate prior knowledge with current information. Along with this finding, Coleman & Shore (1991) presented a table in which parallels were drawn between the cognitive performance characteristic of experts and that characteristic of the gifted. Among the comparisons made was the tendency of both experts and the gifted to rely on self-monitoring processes (cf. Glaser, 1985; Wong, 1982), and the tendency of gifted students to select a representation of information more like that of an expert (cf. Coleman, 1977; Sternberg, 1981; Sternberg & Powell, 1983).

Interestingly, Shore, Rejskind, & Kanevsky (in press) suggested that novices should be thought of as highly capable individuals, rather than individuals who know

little or nothing about a subject. Yet, Shore (in press) noted that high ability students' performances are not always equivalent to those of experts. Although gifted children's performances may exceed that of their average peers, practice and psychomotor development may be needed before their performances are on par with experts in a field. Shore (in press) also noted that "expository teaching of content" is not necessarily required for this to be achieved (p. 21). Of course, in some instances expert-like performance has been observed among very young children. In such cases, Shore (in press) suggested that gifted children, particularly the creatively gifted, may only require experiences to be linked to intellectual skills.

Due to the growing concern that today's youth are inadequately prepared to enter the work force, an increasing amount of research on cognitive apprenticeships and their potential as educational tools has been conducted. Cognitive researchers have began to delineate the cognitive and metacognitive processes that characterize expertise (Collins, Brown, & Newman, 1989). From this research, attempts have been made to expose students to expert-like thinking that they can progressively internalize themselves. Within the school setting, students rarely have an opportunity to learn about the heuristic knowledge (tacit knowledge) and control strategies (metacognitive strategies used to monitor, evaluate, and modify one's progress in solving a problem) used by experts in various fields (Williams, 1992). Instead, educators teach domain knowledge which "consists of the facts, procedures, and concepts that are necessary to solve problems" (Williams, 1992, p. 371).

Williams (1992) noted that classroom teachers are experts in education, but novices in many subject areas. For this reason, teachers often rely on textbook lessons when teaching, rather than relating concepts and their use to familiar situations, or modeling how a person in the particular field would think about a given problem. Consequently, students learn important facts and concepts in a field, but experience difficulty when applying these to attack problems as experts would. Brown, Collins, and Duguid (1989) suggested several differences which separate students' learning environment from the setting in which experts tackle problems. Within the educational setting, students are asked to solve well-defined problems with solutions. In reality, however, much of experts' work is centered around ill-defined problems with no known solutions.

Equally, Brown et al. (1989) stated that the inventive heuristics that students uncover themselves are often overlooked within the classroom where conformity to traditional learning practices is expected. Students frequently feel compelled to disguise their own problem-solving strategies and, instead, solve problems using acceptable methods. Such a restrictive environment is potentially harmful to all students' intellectual development. On the other hand, given the research regarding gifted students enhanced metacognitive and flexible thought strategies, gifted students may be even more likely to develop and dismiss heuristics and control strategies which they discover.

Some researchers have begun to implement educational programs which are designed to draw students into a problem-solving context. One such program, Jasper, attempts to externalize both trainees' and experts' thought processes (The Cognition and Technology Group at Vanderbilt, 1990). It is designed around the notion of exposing students to macro contexts-- complex problem contexts which encourage students to explore a problem for extended periods of time from many perspectives. Williams (1992) suggested that teachers often avoid using macrocontexts as they find it difficult to present complex material in ways which are understandable and interesting to students. For this reason, Jasper is presented via videodisc (The Cognition and Technology Group at Vanderbilt, 1990). It is suggested that presenting information through this medium is appropriate for low achievement students and students with little knowledge in the domain as it helps such learners develop mental models of problems. This point, however, raises an important question. Would such a teaching device be useful to gifted students who already have a rich conceptual model in an area, or who have the capacity to develop such a model at a far more rapid pace than their average or below average peers?

Generally speaking, in light of the similarities which exist between gifted students' and experts' thinking processes, is it possible that gifted learners could benefit more from direct exposure to experts than their average peers? Would this be particularly true in fast-paced work environments where nongifted students may experience difficulty ingesting and integrating the information presented by experts? Could mentoring experiences in which gifted students are matched with experts in their area of interest help gifted students bridge the gap between their performance and that of experts, or help those students who only require experiences to be linked to intellectual skills? Furthermore, if classroom teachers are unable to foster the intellectual needs of gifted students (e.g., gifted students' inventive use of heuristics, metacognitive strategies in various subject areas), could mentors who focus on students' cognitive development be particularly useful to such learners?

Ultimately, such questions are tied to the issue of whether or not gifted students require a differentiated curriculum. As Shore (in press) noted "The greater and more efficient use of expert-like thinking skills opens learning opportunities for bright children that might be inappropriate for others, to the extent that the uniquely held or used skills are necessary to be able to perform well" (p. 27). I suggest that mentorships may be one channel through which such learning opportunities could be provided.

It should be noted that a certain degree of ambiguity still surrounds the term novice. Shore (in press) stated that "Until cognitive psychology can agree on definitions of expert and novice, we can merely observe that thinking processes often associated with expertise are visible in persons clearly not yet experts and who have not yet had the advanced formal training or experience which normally leads to expertise" (p. 22). Shore (in press) proposed that research regarding the etiology of expertise is needed. In making this suggestion, he also drew a distinction between expertise and eminence, the latter having been researched by authors such as Bloom (1985).

#### The Value of Mentorships For Gifted Females

Perhaps not surprisingly, a significant proportion of underachieving gifted students are females (Worcester, 1981; Kerr, 1985). Gifted females often fail to achieve their potential as a result of numerous psychosocial obstacles (e.g., females hide their potential in order to fit in with their peers; females often lack support from teachers and parents who do not expect females to possess special talents, particularly in mathematics and the sciences) (Grau, 1985; Siegel & Shaughnessy, 1991). Arnold and Subotnik (1995) recommended that "Distance from the mainstream makes it especially important that women, minorities, and members of other underrepresented groups receive appropriate exposure and school training in broad talent areas..." (p. 120). Successful female mentors therefore have an opportunity to serve as role models and provide gifted females with the intellectual and emotional support they require to conquer such barriers (Grau, 1985). Although there is considerable evidence that gifted males benefit from mentor relationships (Beck, 1989), Reis (1991) notes that "research focused on the overall development of intellectually gifted women in relation to their education, personal and career choices is exceedingly rare" (p. 193). To date, the research which has been conducted in this area suggests that gifted girls do benefit from mentor relationships. For instance, Kaufmann et al. (1986) found that female and male Presidential Scholars who

received mentoring did not differ significantly in their salaries. According to these authors, this finding suggests that mentorships may benefit gifted females by equalizing their earnings with their males counterparts.

According to Reilly and Welch (1994/1995), current research regarding gifted females suggests that they would benefit from mentoring experiences whether or not the mentorship developed spontaneously or was part of a formal educational program. Beck (1989) examined the effects of one such high school-based program, the Mentor Connection. Data revealed that female mentors, in particular, played a vital role in the lives of female participants. Female mentees felt more strongly than male mentees that their relationship with a female mentor allowed them to explore concerns they had regarding the task of balancing career and family responsibilities. According to Fox (1979), gifted girls need role models of career women who remain single, who marry but have no children, and who successfully balance their vocational and family commitments.

Similarly, Reilly and Welch (1994/1995) conducted a study which reviewed the self-reported attitudes of 61 high school students (33 female and 28 male) who had participated in a school-based mentorship program. Nearly three times as many female than male mentees reported that they had attained a career work focus as a result of their mentoring experience. Female mentees were also more likely than their male counterparts to report increased self-confidence in their vocational and personal capabilities, in addition to developing new skills. Since the completion of this mentorship program, 48% of the female mentees reported having subsequent mentors. This was true for only 25% of the males in this sample. Nevertheless, Reilly and Welch (1994/1995) emphasized the need for more women to serve as mentors for young gifted females. Furthermore, Kerr's (1985) research supports the importance of implementing mentorship programs at the secondary and elementary school levels. Although Kerr's (1985) sample of gifted girls initially achieved higher grades and more awards than their male counterparts, by adolescence these females had lower vocational aspirations than did the males. According to Berger (1989), gifted females' career aspirations and intellectual achievements tend to decline even further during college and after graduation. Kerr (1991) reported that early educational experiences, challenging learning paces, individualized instruction, and mentoring are among the experiences which eminent women suggest as significant in their lives and careers. Kerr (1991) suggested that these experiences may interact with one another, thereby enhancing gifted women's chances of achieving. For instance, the presence of a mentor in a gifted woman's life may increase her confidence in her ability to engage in challenging learning situations. Furthermore, Kerr (1981) stated that the "single most important commonality in the lives of eminent women seems to be that they fell in love with an idea. Falling in love with an idea means committing oneself to a deeply held value, a theory, or an attitude" (p. 412). Kerr (1991) suggested that teachers and mentors can play a significant role in this process.

Over the last decade, it appears that this need for more female mentors has gained increasing recognition. Shamanoff (1985) described The Women Mentor Project which has been specifically developed for gifted girls. The project invites women from traditional and non-traditional careers to share their experiences, as well as inviting the gifted mentees to participate in weekly guidance meetings which are designed to enhance their self-esteem, leadership abilities, and career awareness. Similarly, Berger, Beard, Moore, and Van Voorhees (1986, cited in Zorman, 1993) described a mentorship program, The Mentoring Academy, which holds promise for gifted and nongifted adolescent girls. This program encourages its female participants to consider pursuing courses and careers in science. The participants are paired with a teacher-mentor and are provided with opportunities to visit vocational sites in the community and meet with local women in scientific professions. Although no data regarding the actual enrollment of these students in science courses are so far available, reports from participants and mentors suggest that the students are gaining practical knowledge about planning careers in science. Furthermore, other studies have suggested that the impact of a mentor is particularly effective in ensuring that women remain in science (Lewis, 1991; Light, 1990, cited in Subotnik & Steiner, 1993).

It is clear, however, that further research is needed to determine if there are differences between those mentorships in which the mentor and the mentee are of the same or different gender. There has been some research done in this area within undergraduate colleges (e.g., Erkut & Mokros, 1984). In such an environment, a professor typically assumes the role of the mentor, while the student assumes the role of the protégé. Research indicates that while male students avoid female mentors and seek male mentors with power and status, females tend neither to seek nor to avoid female models. Female students select women as mentors to the extent that they are available and the students are interested in obtaining information about integrating career and family responsibilities. In Torrance's (1984) follow-up study of creative individuals, females tended to report that they appreciated the encouragement and support provided by their mentor. In contrast, males reported that they appreciated the career and professional advice provided by their mentor. Accordingly, Reilly and Welch (1994/1995) found that while female mentors provided both vocational and personal support, the male mentors tended to focus on helping the mentee develop vocational skills. Based on such findings, these authors suggest that male mentors may be less likely to acknowledge the personal support that a female requires. On the other hand, Alleman, Cochran, Doverspike, and Newman (1984) found that the mentoring relationships which they examined did not vary by sex. Therefore, they

suggested that it is unnecessary to avoid cross-sex pairing. Kerr (1985) also suggested that parents seek the best available mentor without regard to gender.

Yet, some females do feel more comfortable with same-sex mentors (Rowe, 1989). Not surprisingly, however, it is often difficult to find female mentors in fields which have been traditionally dominated by males (Shaughnessy & Neely, 1991). Even if a female identifies a potential female mentor in her area of interest, the latter may not agree to act as a mentor since assuming this role could entail risks (Parker & Kram, 1993). In a field which is traditionally dominated by males, a woman often struggles to assume a high status position. She may fear that she does not have the authority or qualifications to act as a mentor and that attempting to do so could jeopardize her credibility in the workplace. Compounding this problem is the fact that young women may be hesitant about seeking older women as mentors. They often feel that the choices that women face today have changed dramatically from those women encountered a generation ago (Shapiro, Haseltine, & Rowe, 1978). Females may even experience difficulty seeking male mentors due to concerns about social appearances. Men often view male protégés as safer investments for the development of leadership skills (Moore & Amey, 1988).

# The Value of Mentorships for Gifted Students from Economically Disadvantaged Environments or Ethnic Minorities

In a similar vein, researchers assert that gifted students from economically disadvantaged homes or ethnic minorities may also benefit from mentorship programs. They too often lack the role models and the encouragement needed to reach their full potential (McIntosh & Greenlaw, 1990). Accordingly, Flaxman, Ascher, and Harrington (1988) suggested that because "such youth often have a patchy reservoir of social resources, the psycho-social and instrumental aspects of the planned mentoring may be even more critical to their individual success than for others" (p. 36). Such students often require early intervention to raise their lower levels of career aspirations (Perrone, 1991). Alvino, McDonnel, and Richert (1981) suggested that mentoring may be also useful in cases in which the disadvantaged child's talent is difficult to discern in childhood.

According to Berger (1990), mentorship programs for economically disadvantaged gifted learners are emerging in many parts of the United States. One such program, Project Redirections, recruits women volunteers from the community to act as mentors by providing affective and social support to gifted adolescents from socioeconomically disadvantaged backgrounds (Branch, Riccio, Quint, 1984, cited in Zorman, 1993). Another program in Manhattan, New York, Project Synergy (Wright & Borland, 1992), involves matching economically disadvantaged, yet academically successful, grade eight students with potentially gifted kindergarten children who also come from impoverished homes. The primary goal of Project Synergy is to develop effective means of identifying and nurturing the abilities of this at-risk gifted population. This program is especially unique in light of the young age of its mentors and mentees. It is noteworthy that most of the research on mentoring programs for the gifted is centered around adolescents (Zorman, 1993). Only a few references to mentoring programs for preschool children (Hendricks & Scott, 1987) and elementary school children (Lupkowski, Assouline, & Vestal, 1992) have been cited in the literature.

### The Value of Mentorships for Multi-Talented Gifted Students

For gifted and talented learners who excel in multiple areas, mentors can also lend much assistance (Berger, 1990; Comer, 1989; Kleine & Webb, 1992). These gifted learners may feel frustrated and overwhelmed by the host of vocational and educational choices which lie ahead of them. A mentorship program which offers career exploration may be of tremendous assistance. The gifted child can explore a career, and its associated lifestyle, and decide whether or not he or she has the ability and temperament to pursue this line of work. Parents often report that mentors have a "maturing effect" on their gifted son or daughter (Berger, 1990, p. 2). Such students suddenly develop a clearer focus concerning the vocation they would like to pursue. Reilly (1992) stated that students with multiple potentials often require more information and personal insights from adults who are involved in the students' areas of interest. Mentoring is therefore being increasingly recognized as a significant component of career exploration programs for the gifted. The Dallas (Texas) Independent School District Internship Program (Cox & Kelly, 1989) and the Mentor Connection Program in Minnesota (Beck, 1989) are two examples of such programs.

Mentorships can also provide opportunities for gifted students to explore unusual topics, develop new skills in diverse areas, and use sophisticated equipment which is unavailable in the regular classroom due to budget constraints (Comer, 1989). Zorman (1993) noted that even among the gifted identified by high scores on IQ tests, one cannot assume that gifted students represent a homogeneous group of learners. Gifted students' interests and specific abilities vary considerably as do their learning styles, self-concepts, and degree of motivation. Because it is often impossible for teachers to attend to all of these differences, mentors can play a significant role in providing guidance and opportunities for children to develop areas of interest, while adapting their teaching style according to the children's needs. <u>Special Characteristics and Educational Needs of Gifted Students that Support the Use of Mentors</u>

It has been suggested that gifted students may interact more successfully with adults due to their advanced affective and cognitive development (Baska, 1989). Buescher (1991) stated that gifted students typically have an increased capacity for relationships with adults as well as the ability to learn from them. According to Reis and Follo (1993), gifted and talented students are also good candidates for mentor programs due to their ability to work independently and their high level of motivation. Griggs (1991) stated that gifted learners are often "self-learners who require a high degree of independence and autonomy in learning. They prefer large doses of independent study. In the classroom these students consistently prefer a selflearning modality to the other sociological stimuli of pairs, peers, groups, or adults" (p. 67).

Shaughnessy and Neely (1991) also noted a number of personality traits and variables which frequently prevent gifted children from reaching their potential. For instance, gifted children often attempt to capitalize on the wrong abilities (e.g., musically talented children frequently attempt to paint or draw--Sternberg, 1986), lack product orientation and completion, and experience difficulty translating good ideas onto paper.

Moreover, Bloom (1985) concluded from his studies on talented individuals in music, art, athletics, mathematics, and science that always "there is a long and intensive process of encouragement, nurturance, education, and training" which allows gifted persons to reach their full potential (p. 3). Similarly. Arnold and Subotnik (1995) noted that mentoring for talent development differs in important ways from how teachers provide instruction in school: "students in schools learn several unrelated subjects at a time, in teacher-led groups, and in relatively short segments of hours, seasons, and years. Intensive development of a particular talent proceeds quite differently, with individualized, continuous training taking place over extended periods" (p. 120). Griggs (1991) stated that "exceptionally gifted children have intense powers of concentration and typically learn by total immersion" (p. 71). Mentors frequently spend several hours to a full work day with mentees, thereby satisfying gifted students' need to immerse themselves in their area of interest and invest several hours a day developing their talent.

Moreover, Pizzini (1985) asserted that many of the textbooks used in the classroom are outdated and are not appropriate for the learning needs of gifted students. Even when educators encourage gifted students to pursue self-directed projects in areas which extend beyond the regular curriculum, they often experience difficulty developing such projects in meaningful ways. Mentors are often in the position to encourage and guide individualized and self-directed learning in areas which are of interest to their protégés and themselves.

Mentorships can also play a significant role in addressing the affective and social needs of gifted children. Research suggests that differential affective characteristics exist among the gifted (cf. Silverman, 1991; VanTassel-Baska, 1991). Feldhusen, VanTassel-Baska, & Seeley (1989) stated that gifted students are often faced with feelings of social isolation and inadequacy due to unsatisfactory interpersonal relationships. Equally, intensity, heightened sensitivity, and perfectionism, are often characteristic of gifted students (Silverman, 1991). Mentors could serve as role models for dealing with such tendencies which can become problematic, in addition to offering emotional support. Mentors who are experts in a field may have had to identify means of effectively dealing with their own tendency toward perfectionism. Furthermore, talented adolescents are often concerned about how well their talents are developing or may feel the need to mask such talents to gain peer acceptance (Buescher, 1991). Buescher suggested that trusted adults (e.g., mentors) can play an important part in aiding these students to objectively evaluate their talents.

Many school-based mentorship programs for the gifted are structured around Renzulli's (1977, 1994) Triad Enrichment Model which emphasizes the importance of self-directed learning. Prior to or during the initial stages of the mentorship, students would engage in Type I (general exploratory experiences) and Type II (group training activities) enrichment projects (Renzulli, 1977, 1994). Most mentoring activities, however, typically constitute Type III activities which are defined as individual and small group investigations of real problems (Cellerino, 1983). In the majority of mentorship experiences, gifted learners are required to develop a research project or individual/small group study in an area of interest, collect and interpret data, and present their findings in written as well as oral form (Beard & Densem, 1986; Leroux, 1992; Milam & Schwartz, 1992; Prillaman & Richardson, 1989). Of course, during such a project the student is confronted with a moderate degree of risk-taking (i.e., independently making decisions). According to Kleine & Webb (1992), the presence of creative or intellectual risk is yet another reason why mentorship programs are particularly appealing to gifted students.

It is noteworthy that mentors may not always have time to participate in indepth training which addresses how one facilitates Type III projects (Cellerino, 1983). Nevertheless, many researchers (e.g., Gallagher, 1985; Gray & Gray, 1988) insist that mentors must participate in some training in order for them to understand their role. In particular, Gray and Gray (1988) suggested that because professionals and parents do not have the time to meet with a protégé on a regular basis and to participate in the training needed to facilitate Type III enrichment projects, it is often useful to recruit future teachers and university students as mentors. Students are more frequently available to participate in training workshops and are accustomed to being monitored and evaluated. Gray and Gray (1988) also cited several difficulties which researchers have reported regarding the use of community members as mentors. For instance, Fox (1979) stated that adult mentees were not always able to relate well to adolescent or younger protégés, and Boston (1976) noted that adult mentors were not always able to make the time commitment which enrichment projects demanded. Since 1984 Gray and Gray (1988) have recruited future teachers and college students as mentors and helped establish formal mentoring programs based on Renzulli's Triad model (1977) in British Columbia, Virginia, Arkansas, Washington, California, Michigan, Florida, and Oregon. In these programs, like several others (e.g., The Purdue Mentor Program described by Ellingson, Haeger, & Feldhusen, 1986), a mentor may be assigned to several mentees who share a common area of interest. The Value of Mentorships for Gifted Students in the Sciences and Mathematics

According to Pizzini (1985), learning experiences in which gifted students are required to take risks and direct their own learning are rarely provided by the regular curriculum. Instead, gifted and talented students, like others, are accustomed to be consumers rather than producers of information. Rather than actively seeking solutions to problems, students wait for the teacher to provide the correct answer. Pizzini (1985) argued that such an atmosphere is particularly detrimental for those students who are potentially gifted in science. He asserted that students need to be presented with problems which do not have known solutions. Only within this context is creativity possible. Because it is not always possible to encourage independent investigation, mentoring relationships can play a critical role in ensuring that gifted and talented students are provided with an opportunity to develop research skills. Reis and Burns (1987) stated that one of the more important skills mentors should possess is the ability to share their methodology and inquiry skills. Gray and Gray (1988) also suggested that mentors can offer gifted protégés an opportunity to develop higher level thinking skills. Opportunities to investigate real problems with solutions, engage in independent study under competent supervision, and produce professional end products are among the recommended practices in gifted education which have received some support (Shore et al., 1991).

In a study conducted by Scobee and Nash (1983), the majority of the 56 successful scientists surveyed suggested that the optimum experiences for gifted students should include opportunities to gain hands-on experience, using equipment, and developing products in actual work environments. One quarter of the scientists surveyed felt that mentors had played an important role in their interest in spacerelated fields, and mentorships were one of their three most highly recommended experiences for students. Furthermore, 69% of the space scientists recommended opportunities for bright science students to interact with teachers who challenge students to think for themselves (e.g., activities emphasizing scientific investigation and problem solving). To date, the Engelmann Institute is one of several organizations in the United States which has recognized the special needs of talented students within the fields of mathematics and science (Engelmann, 1993). Its mentorship program has served over 400 students since 1988.

#### Selection Criteria and Characteristics of Mentorship Programs

Mentorship programs are not appropriate, however, for all gifted students. Candidates should be sufficiently mature to benefit from a one-on-one relationship with an adult (<u>Gifted Mentor Handbook</u>, 1980). In many programs the gifted student must demonstrate an ability in the area to be pursued, along with a high level of creativity and motivation to explore a topic. IQ tests and other standardized tests (e.g., WISC-R; Gates McGinitie) are frequently referred to when considering a given child's ability in a particular area (cf. Christie, 1995; Leroux, 1990). A student's creativity may be determined by observing past products or using tests (e.g., TTCB). Finally, a student's motivation is often inferred from an interview or a self-statement stating why he or she should be given an opportunity to take part in the program.

Still other programs have used markedly different selection criteria. For instance, Lambert & Lambert (1982) sought students for which there was a

discrepancy between their ability (as measured by standardized tests) and their academic performance (determined by grades). They also sought gifted learners with weak interpersonal skills, emotional and physical handicaps, and unusual interests.

Just as the selection criteria tend to vary across schools so, too, do the activities in which the mentor and mentee engage, the age differences between the mentor and protégé, and the length of the mentorship. For instance, Levinson (1978) found that there was typically an eight to fifteen year age span between the mentor and the mentee. Equally, the length of mentoring relationships varied from several weeks to many years. The mentorships reported in Levinson's (1978) study endured up to three years. In Torrance's (1984) longitudinal study of mentorships for creatively gifted students, he found that 52 percent of the mentorships persisted at the time of his follow-up 22 years later! Furthermore, Torrance (1984) noted that several of the mentorships evolved into peer relationships. On the other hand, geographic distances and heavy professional demands were among the several reasons provided for the discontinuance of mentorships.

One characteristic that all mentorship programs seem to share is the need for an active coordinator (Christie, 1995; Atkinson, Hansen, & Passman, 1992). Generally speaking, the coordinator or director of the program is responsible for recruiting and screening potential mentors, selecting students to act as mentees, providing training for mentees and in some cases mentors, and the evaluation of students' mentorship projects. Furthermore, in many programs the coordinator may even assume the role of a second mentor to each student participating in the program. Such an arrangement is referred to as double mentoring. In contrast to the traditional mentoring relationship (direct mentoring), the mentor is not expected to attend to all of the student's needs. Instead, the mentor is asked to provide support in the mentee's intellectual and vocational growth, while the coordinator attends to the student's affective needs (i.e., coping skills, social adjustment, communication skills, etc.) (Winters, 1989). According to Clasen & Hanson (1987), mentoring programs often fail because the mentor is unable to provide the affective support that the gifted student requires. In the traditional setting, developmental needs were typically cared for by the mentor. However, in today's fast paced world this is not always possible. In fact, a national survey of gifted programs (Cox, Daniels, & Boston, 1985) reported that the mentor label did not necessarily extend beyond a specific learning task. For this reason, Clasen & Hanson (1987) advocated the use of double mentoring, rather than direct mentoring programs.

#### **Benefits Derived by Mentees**

Several benefits seem to be associated with participating in a mentor relationship. For the gifted mentee, enhanced self-esteem, extended personal interests and talents, enlarged career aspirations, and the formation of a friendship are among the reported benefits (Edlind & Haensly, 1985; Reilly, 1992). Torrance (1984) reported that having a mentor made a significant difference in the adult creative achievement of those who participated in his study. In one of the few studies using a comparison group. Shandley (1989) found that students who completed Excel (a mentorship program which used community leaders as mentors) had significantly higher self-perceptions of their leadership abilities than an active group of student leaders who did not complete the program. Still other gifted mentees have reported that participating in a mentorship program played a role in their acceptance into university programs, in addition to providing opportunities to attain research positions and participate in science fairs (Pizzini, 1985). Parents of students in the Purdue Mentoring Program even noted a spill-over effect, whereby a protégé's sibling would begin devoting more time to pursuing areas of interest (Ellingson et al., 1986).

Interestingly, Kaufmann et al. (1986) found that the Presidential Scholars reported that role modeling and support and encouragement were the most important functions their mentor performed. These authors suggested that this finding was unexpected as networking and other vocational tasks are typically regarded as the primary functions of mentors. Kaufmann et al. (1986) suggested that this finding indicates that gifted individuals may "prefer a more qualitative, skill-oriented mentorship to one that specifically emphasizes climbing the organizational ladder" (p. 577). Torrance's (1984) and Levinson's (1978) studies of talented and gifted individuals also provided evidence that protégés value and owe much of their success to the support and encouragement provided by their mentors. Schockett and Haring-Hidore (1985) reported that there are two primary types of mentoring functions. psychosocial and vocational. They suggested that researchers may want to examine which functions are most valued by persons in business versus helping professions versus education. Within the context of education, the present study proposes an examination of whether gifted students require mentors to serve different functions than those which are typically performed for nongifted students.

#### Benefits Derived by Mentors

Perhaps not surprisingly, mentoring also seems to have an impact on the mentors themselves. Many mentors report feeling rejuvenated. Other mentors regard this relationship as an opportunity to clarify one's personal and vocational goals, renew one's hope for the future, and obtain new ideas (Kleine & Webb, 1992). Gray and Gray (1988) also stated that employers who encourage their employees to participate in mentoring projects often note an improvement in the general morale of the organization. Some researchers suggest that the benefits which a mentor derives may stem from Erikson's (1963) notion of Generativity versus Stagnation. During the
former stage, an adult benefits from sharing knowledge and acting as a guide to a younger individual (DeCoster & Brown, 1982).

### Limitations of Previous Research

In previous research, benefits ascribed to both the mentee and mentor were reached through questionnaires and interviews. One must therefore interpret such findings cautiously due to the possibility of retrospective and self-reporting bias, the use of correlational designs, and the possibility of self-selection bias (randomization of subjects was not used). To date, few studies have compared gifted children who have mentors with those who do not (Jacobi, 1991). In fact, Cosgrove's (1986) study was one of the few which used a control group. In his study of freshman mentoring, Cosgrove (1986) found that students who participated in the student-development transcript program exhibited a more positive attitude toward their university, in addition to demonstrating increased confidence in their ability to make decisions and successfully deal with problems. More research must be conducted using a control group. One might also consider comparative studies in which gifted students participating in mentorship programs are compared with gifted students who are in a different programming option.

One of the greatest obstacles facing researchers in this area is the absence of a widely accepted operational definition of mentoring. These definitional considerations have been compounded by the diverse descriptions of mentorship programs--whether this diversity lies in terms of the age of the mentors, the length and nature of programs, etc. Despite such obstacles, it is imperative that researchers strive to identify designs whereby the effect of mentoring relationships can be more fully understood. As Arnold and Subotnik (1995) noted, society must dismiss the "myth that talented individuals are self-sufficient, driven inexorably to fulfill their genius, and best left to their own devices" (p. 122). Yet, gifted and talented students "want and need ownership of their learning" (Runions & Smyth, 1985a, p. 131). To date, mentorship programs appear to be a promising means by which both these goals may be both realized. As Levinson (1978) pointed out, "given the value that mentoring has for the mentor, recipient, and society at large, it is tragic that so little of it actually occurs" (p. 254).

### Summary

With this as background, it is clear that more research is required before educators are able to make mentorship experiences an integral part of current gifted and talented programs. There is a substantial amount of data indicating that mentorships are generally rewarding experiences (cf. Reilly, 1992; Weinberger, 1992). It is unclear, however, whether or not mentorship programs offer uniquely appropriate educational experiences for gifted students. Although researchers (cf. Clansen & Hanson, 1987; Runions & Smyth, 1985a; Zorman, 1993) have argued that mentorships are especially suitable for gifted students, empirical research in support of this claim is rarely presented.

As noted, Kaufmann et al. (1986) found that Presidential Scholars valued mentors' support, encouragement, and role modeling above all other functions. This finding was interesting in light of the widely held belief that networking and other work-related tasks are fundamental aspects of mentoring. In fact, few Presidential Scholars reported or described this latter type of guidance as valuable. This suggested that gifted individuals may prefer mentorships which emphasize emotional and social development to those which emphasize "climbing the organizational ladder" (Kaufmann et al., 1986, p. 577). The existence of such a preference would in turn lend support to the claim that mentors serve qualitatively different functions for gifted versus nongifted individuals. Therefore, the purpose of the present study was to investigate whether or not a preference for psychosocial mentorships extended to gifted individuals beyond Kaufmann et al.'s (1986) sample.

Two hypotheses were proposed, based on previous research indicating that the two primary types of mentoring functions are psychosocial and vocational (Schockett & Haring-Hidore, 1985). First, gifted students will prefer mentorships which address their emotional or social needs more than those which focus on their vocational needs. Second, nongifted students will value mentoring relationships which address their emotional or social needs as much as those addressing their vocational needs. To test these hypotheses, an instrument which consists of scenarios and statements addressing various vocational and social or emotional needs was designed. Gifted (experimental) and nongifted (control) students, who had and had not been mentored, were asked to participate in the study. If the study's hypotheses are supported, the claim that mentorships are particularly appropriate and in some ways unique educational experiences for gifted students will gain empirical validation. Such data will also provide support for the inclusion of mentorship experiences in gifted and talented programs.

### CHAPTER 2 METHOD

### Participants

Table 1

Characteristics of the Sample

ſ	MALE		FEMALE		
Elementary	Mentor	No Mentor	Mentor	No Mentor	
Explorations	0	2	2	i	
Non-Explorations	0	2	0	0	
	MALE		FEMALE		
Secondary	Mentor	No Mentor	Mentor	No Mentor	
Explorations	4	13	2	2	
Non-Explorations	5	2	4	0	

The sample consisted of 39 participants, 28 of whom were male and 11 of whom were female. Seven students attended elementary schools and 32 attended secondary schools.

Twenty-six of the students had taken part in Explorations, an enrichment summer school at McGill University. Fifteen of the 26 Explorations students had participated in another summer enrichment/creative program or gifted/enrichment program. There was only one student who had never attended Explorations, but had attended another enrichment, gifted, or creative program. Of the 27 students, 8 had been mentored, while 19 had not been mentored.

Twelve students had never taken part in Explorations summer program nor had they participated in another enrichment, gifted, or creative program. Of these students, nine had been mentored, while three had not been mentored. Participants' allocation to the above groups was decided after relevant demographic information was collected (please see Appendix A, p. 1).

The participants were identified through three sources. The first source was the Prometheus Project, an out-of-school mentoring program located in Montreal. The seven students who were identified through this source attended Westmount High School. The Explorations Summer Program at McGill University served as a second source. Twenty-six Explorations students participated in the study. Finally, six students were referred to me by Explorations students.

#### <u>Materials</u>

A three part questionnaire was developed (see Appendix A). Part A consisted of 16 scenarios describing various benefits of mentoring. Part B consisted of 21 brief statements addressing functions that mentors may serve. Finally, Part C asked students to describe how Parts A and B were similar and dissimilar and to provide suggestions or comments regarding the questionnaire or the topic of mentoring.

<u>Development of instrumentation</u>. The review of the literature on mentoring yielded 27 journal articles, ERIC documents, and books of particular interest (See Appendix B) These studies assessed the benefits of mentoring programs, in addition to sometimes providing a program description. Furthermore, several of such studies included a description of the instrumentation used (e.g., questionnaires, surveys, interviews). There were 11 recurring themes in these 27 reports, addressing the different types of benefits of mentoring programs:

- Career Exploration
- Development or Enhancement of Self-Respect
- Development or Enhancement of Interpersonal Skills
- Improvement in Academics
- Development or Enhancement of Personal Ethics
- Extension of Interests or Talents
- Development or Enhancement of Communication Skills
- Development or Enhancement of Creativity
- Development or Enhancement of Metacognitive Skills
- Establishment of a Friendship
- Benefits for Mentors.

Different studies did not necessarily use these precise terms. Subsequently, the benefits were listed in order of frequency of occurrence from Career Exploration which was cited on 15 occasions to Benefits for Mentors which was cited only once.

Next, nine articles were selected from the original list of 27 publications. These studies were selected because they were recent publications and because they used instrumentation specifically designed to assess the effects of mentorships. Table 2 was created to display the specific benefits reported in each of the nine studies. Each number (rows 1 to 9) represents a particular researcher or research team, and an abbreviated form of each variable appears across the top of columns 1 to 13. Note that two additional variables were added to this table--intrapersonal development or enhancement and development or enhancement of personal or societal responsibility. The former was a finer distinction of the development or enhancement of self-respect variable, and the latter a finer distinction of the development or enhancement of a set of ethics variable.

Table 2

# Nine Recent Research Studies that Address the Benefits of Mentoring and the Instrumentation Used

	car	sr/e	inte	intr	aca	eth	cre	met	fri	men	res	com	int
1	Y			Y				Y					Y
2					Y			1					
3	Y		Y	Y	Y		Y		Y		Y	Y	Y
+				Y	Y						Y		
5	Y	Y	Y	Y		Y	Y		Y	Y		_	Y
6		Y	Y						,	Y	Y		
7	Y			Y	Y				•				
8		Y		Y	Y				Y				Y
9	Y	Y	Y									Y	Y

Y = Yes, the author(s) reported that a significant number of participants gained the benefit as a result of participating in the given mentorship program.

### Authors (Column 1 of Table 2):

1	=	Ambrose, Allen, & Huntley (1994)	Questionnaire for mentee
2	=	Beard & Densem (1986)	Student self-assessments (pre &
			post)/teacher assessments(pre &
			post)/and parental post-evaluations
3	=	Beck (1989)	Mentorship Inventory (for mentee)
4	=	Christie (1995)	Evaluations
5	=	Edlind & Haensly (1985)	Interview protocol & questionnaires
			for mentee and mentor
6	=	Leroux (1990)	Does not describe assessment tool(s)
7	=	Pizzini (1985)	Interview
8	=	Prillaman & Richardson (1989)	Questionnaires for mentor and
			mentee
9	=	Reilly (1992)	Questionnaires for mentor and
			mentee

Potential Benefits Gained as a Result of Mentoring Experiences (Heading Row of Table 2):

### car = career exploration

sr/e = enhancement of self-respect/esteem

inte	=	interpersonal development
intr	=	intrapersonal development
aca	=	academic achievement
eth	=	development of a set of ethics or values
cre	=	development or enhancement of creativity
met	=	development or enhancement of metacognitive skills
fri	=	establishment of friendship with mentor or fellow mentee
men	=	benefits derived by mentor
res	=	development of personal responsibility or responsibility
		to community
com	=	development or enhancement of communication skills

int = development or enhancement of interests or talents

While reviewing the literature on mentoring, I identified the need to address the following question: Are mentoring experiences particularly and in some ways uniquely appropriate educational practices for gifted learners, or are they appropriate for all students including the gifted? In an attempt to answer this question, research supporting the unique cognitive, vocational, and social or affective needs and characteristics of the gifted was collected. In light of this research, it was proposed that mentors have an opportunity to serve qualitatively different functions in terms of gifted students' vocational and personal growth. Previous research suggested that gifted individuals valued mentors' support, encouragement, and role modeling above all other functions (Kaufmann et al., 1986). In order to empirically test that gifted persons do prefer psychosocial functions performed by mentors to vocationally oriented ones, a new instrument was designed. The instrumentation which had been used by other authors was not designed to address this research question.

The new instrument consisted of two parts. Part A contained a series of scenarios in which students derived different benefits from mentoring relationships. Part B contained direct statements addressing potential functions that mentors could serve. Asking participants to initially respond to scenarios was appealing because the benefits addressed were not always immediately discernible. If participants were uncertain of the particular benefits being modeled, they might be more likely to give truthful, rather than desirable, responses. To this extent, participants' preferences for particular scenarios could be teased out. It was important to include Part B, however, as it was unclear whether or not the scenarios would serve this function. There was the possibility that students would respond just as honestly and reliably to the direct statements. Furthermore, there was some concern as to whether or not students' responses to scenarios would be affected by extraneous factors (e.g., gender of the mentor and mentee; subject matter being pursued by the mentor and mentee). To this degree, Part B's direct and compact character could be advantageous.

While the design of the instrument was being considered, more research was reviewed and the list of benefits associated with mentoring expanded. Subsequently, a new list of 16 versus 11 potential benefits was created. Seven of the 13 benefits previously identified in Table 2 were included in this list (career exploration, enhancement of self-respect or esteem, interpersonal development, development of a set of ethics or values, establishment of friendship with mentor or fellow mentee, development or enhancement of communication skills, development or enhancement of interests or talents). The remaining 6 were excluded due to their low frequency of occurrence within the literature or because they were extensions of those benefits that were retained.

Furthermore, research has suggested that the two primary types of mentoring functions are psychosocial and vocational (Schockett & Haring-Hidore, 1985). Accordingly, a decision was made as to whether each benefit addressed mentees' vocational or emotional or social needs. As indicated below, five of these benefits related to mentors' psychosocial functions and 11 related to mentors' vocational functions. The one benefit related to students' cognitive development was placed under vocational needs. This was done because this benefit was addressed within a vocational context. Specifically, a chemist invited her mentee to assist her with projects in a science laboratory (this only applied to the scenario addressing cognitive development).

- Scenario 1: Vocational Needs--Career Decision
- Scenario 2: Vocational Needs--Skill Development/Enhancement
- Scenario 3: Emotional/Social Needs--Need for Support and Encouragement
- Scenario 4: Emotional/Social Needs--Coping with Perfectionism
- Scenario 5: Vocational Needs--Ethical Development
- Scenario 6: Vocational Needs--Hands-on Experience
- Scenario 7: Vocational Needs--Development of an Academic Plan

- Scenario 8: Emotional/Social Needs--Development of a Friendship
- Scenario 9: Vocational Needs-Personality Suitability for a Prospective Career
- Scenario 10: Vocational Needs--Development/Enhancement of Interpersonal and Communication Skills
- Scenario 11: Emotional/Social Needs--Coping with Sensitivity
- Scenario 12: Emotional/Social Needs--Development/Enhancement of Self-Respect
- Scenario 13: Vocational Needs--Forming a Connection between Academic Course Work and a Prospective Career
- Scenario 14: Vocational Needs--Intellectual Stimulation
- Scenario 15: Vocational Needs--Developing Contacts in a Work Field of Interest
- Scenario 16: Vocational Needs--Balancing Family and Career Responsibilities

For each benefit, two scenarios were invented--one in which the mentor's gender was female and the other male. The gender of the hypothetical mentee was alternated in each scenario. An exception was made in the case of Balancing Family and Career (Vocational Needs Variable). For this benefit, a scenario was created for each of the four possible mentor and mentee gender combinations. This exception was made due to the significant impact that female mentors, in particular, have on female mentees who are concerned about juggling career and family responsibilities (Beck, 1989). Ultimately, 34 scenarios were created.

Part B (Appendix A) was composed of 21 direct statements. Each statement described a potential function that mentors could perform. Sixteen of these 21 functions were based upon the benefits addressed in Part A. The remaining five functions (Part B--Statements 1, 9, 11, 12, and 19) were merely extensions of one of the 16 benefits already addressed. For this reason, scenarios were not created for these five. Their presence in Part A would have unnecessarily increased the time required to complete the questionnaire. On the other hand, they could be quickly addressed when presented as brief statements in Part B.

Members of the High Ability Inquiry Research Group (a seminar composed of professors and students who are involved in research projects dealing with inquiry or high ability) voluntarily participated in the first pilot study. In step one of the questionnaire, participants (eight of whom had been mentored and three of whom had not been mentored; 3 males and 8 females) were asked to use a 4-point scale--Very Poor, Poor, Good, Very Good--to evaluate the quality of the mentoring relationship for the mentee in each scenario. In step two, participants were asked to read each scenario once again and using scale B--Useless, Slightly Useful, Useful, Very Useful--evaluate how useful they believed each kind of mentoring experience was compared to the others.

Upon completing Part A of the questionnaire, participants were asked to complete Part B. As noted, Part B was composed of 21 direct statements which addressed potential functions that mentors could perform. Using a four-point scale, participants were asked to indicate the extent to which they agreed or disagreed with each statement, with 1 representing that they strongly disagreed and 4 indicating that they strongly agreed.

It took participants approximately one hour to complete the questionnaire. It was then decided that only one scenario would be used for each benefit in order to reduce the amount of time required to complete the questionnaire. For each benefit, the scenario with the overall higher mean value on the quality and the usefulness scale was retained, while the other was removed from the questionnaire. Fortunately, an equitable mentor and mentee gender distribution emerged across the 16 remaining scenarios. Data revealed that there were no significant differences between participants' responses on Scale A and Scale B. Ultimately, both scales were omitted and a new scale was created for the second pilot study. Participants may have found the tasks presented in steps one and two of Part A to be highly similar. It may have also been too difficult and overwhelming to draw comparisons among such a large number of scenarios (Step 2). This may have been particularly true when the benefits addressed were of a similar character (e.g., coping with perfectionism and coping with sensitivity).

On the other hand, participants responded differently to the common 16 items presented in Parts A and B. Therefore, both parts of the questionnaire were retained. Perhaps this difference was related to a concern voiced earlier. Specifically, participants may have been responding to more than just the benefits described in the scenarios. Perhaps, extraneous variables such as the subject matter or interest shared by mentors and mentees were affecting participants' responses to the scenarios. On the other hand, such factors would not apply in Part B, hence, explaining the different response patterns on the common 16 items.

In the second pilot study, students from graduate courses in gifted education and statistics within the Department of Educational and Counselling Psychology completed the revised questionnaire. Five participants had been mentored, while 21 had not (3 male, 2 gender not given, and 21 female). In Part A of the questionnaire, participants read the 16 scenarios and used a new scale--Not Valuable At All, Slightly Valuable, Valuable, Very Valuable--to indicate whether or not each mentoring relationship portrayed the roles or functions which they thought a mentor should fulfill. In Part B, participants were provided with the same instructions and task that were presented to participants in the first pilot study.

Subsequently, a Part C was added to the questionnaire. In Part C, participants were asked to indicate in what ways Parts A and B of the questionnaire were similar and dissimilar, and whether or not they perceived Part B to be assessing different qualities from those assessed in Part A. Participants also were asked to share any other comments or suggestions they might have regarding the questionnaire or the topic of mentors and students.

### Procedure

A letter (Appendix C) describing the purpose of the study and need for participants was mailed or personally delivered to those identified in the sample. In each case, a consent form (Appendix D) accompanied this letter. If students agreed to participate in the study, they were asked to complete the consent form and fax or mail it in the stamped-self-addressed envelop provided. Students under the age of 18 were informed that they also had to obtain parental consent to participate in the study. The letter and consent form were sent twice to those students identified through the Prometheus Project. On the first occasion, they were given to the students during their homeroom period. Four responses were received. Another copy of the letter and consent form were then mailed directly to the remaining students' and parents' residences.

After three weeks, those students who were identified through the Prometheus Project and the Explorations Summer Program were telephoned if they had not responded to the letter. It was explained that the purpose of the telephone call was to confirm that they had received the letter, to answer any questions that they might have, and to inquire whether or not they were interested in participating in the study. Those students and parents who returned consent forms were also contacted by telephone. Each student was thanked for agreeing to participate in the study and informed that the questionnaire could be delivered to them in one of two ways. The first option was for me to go to the address indicated on the consent form. In such cases, students' questions regarding the questionnaire could be answered directly. The day and time of the meeting was determined at the convenience of the participant and parent or guardian. If a student and parent did not feel comfortable with this option or if I could not travel to their home using the bus and subway systems, the questionnaire was mailed along with a stamped-self-addressed envelope. Nine of the 39 participants opted for the latter. In these cases, students were

encouraged to contact me at home or work if they had any questions while completing the questionnaire.

Participants were asked to complete the three parts of questionnaire, along with an information sheet (Appendix A, p. 1). On this sheet, students were asked to indicate their gender, age, whether or not they had ever participated in special programs (e.g., Mentorship Program, Summer Enrichment or Creative Program, French Immersion Program, or Gifted or Enrichment Program), and whether or not they ever had a mentor. With this information, I was able to identify whether or not participants belonged to the experimental group (those who had participated in a creative, enrichment, or gifted program) or control group (those who had not participated in a creative, enrichment, or gifted program).

During meetings with students, the questionnaire was completed in approximately 25 minutes or less. There were only two instances in which this time was exceeded. In these cases, the students took a longer amount of time to consider each scenario and statement. None of the participants expressed or appeared to experience difficulty with the level of vocabulary in the questionnaire. Before beginning the questionnaire, participants were asked whether or not they understood the instructions provided in Parts A and B. Additionally, I inquired whether or not the term "mentor" was understood (defined in the instructions provided in Part A, Appendix A). None of the students expressed difficulty understanding the instructions. However, a quarter of the students asked for further explanation concerning the term mentor either indirectly (had not proceeded to the next page after appearing to have read the instructions at least once) or directly. In such cases, examples of individuals who could be mentors were provided (e.g., coaches, mothers, fathers, older siblings, teachers, friends of the family, Girl Guide or Scout leaders). The definition of mentoring provided in the instructions was also reiterated. Furthermore, if a student was uncertain if a particular individual had mentored them, inquiries were made regarding their relationship (e.g., the types of activities they engaged in together, the potential mentor's age, how often they interacted). If, for example, a student had never met the individual in question, I would suggest that this person was not a mentor, but more likely an idol or role model. If the individual was a peer and the relationship did not extend beyond sharing common interests, I would suggest that this individual was a friend and not a mentor. Ultimately, the student was always encouraged to make the final decision.

Several students also inquired whether or not the scale following the instructions was to be used to rate the first scenario. I explained that this scale merely served as an example and that each scenario was to be rated using the scale located directly underneath it. In one other instance, a participant asked for the meaning of the term, self-criticism (please see Appendix A, Part B, Statement 13). The term was defined using an example of a student who was never satisfied with his performance on the soccer field. The student frequently thought and spoke negatively about his performance, despite his dedication and long hours of practice. Later the student's coach helped him to identify soccer moves that he needed to work on, while also encouraging him to recognize his efforts and the progress he had made. It was

explained that realizing both your strengths and weaknesses is important and that in this example the coach had helped the student effectively deal with self-criticism. After hearing this example, the student stated that he understood the term. Finally, I reminded students that there were no right or wrong answers and this was not a test. Instead, the questionnaire simply asked them to express their opinion on the topic of mentoring.

After completing the questionnaire, students were thanked again for agreeing to take part in the study and asked if they had any questions. Six parents expressed an interest in knowing the results of the study. They were informed that they would be contacted with such information in May or June. Students and parents who received questionnaires by mail were also thanked and encouraged to contact me if they wished to know the results of the study.

#### CHAPTER 3

### RESULTS

A Pearson correlation matrix was generated based on the 16 scenarios in Part A and the 21 statements in Part B (Appendix E). The correlations ranged from zero (statements FF and JJ) to 0.7 (scenario B and scenario J). Of particular interest were the low correlations among the common 16 benefits in Parts A and B, ranging from 0.08 (scenario J and statement QQ) to 0.45 (scenario D and statement MM). There may be several reasons for this finding. First, participants' responses to the scenarios may have been influenced by extraneous factors. For instance, the gender of the mentor or mentee, or the career or subject matter pursued in the mentoring relationship may have affected participants' responses to the scenarios. However, this would not be true of Part B in which students responded to brief and direct statements addressing mentoring roles. Furthermore, a greater amount of time and concentration was required to complete Part A. Participants may have felt overwhelmed by such requirements and the high degree of similarity among many of the scenarios. A quarter of the participants commented on the length or repetitiveness of the scenarios. While responding to Part A, seven students even regularly counted the number of scenarios that remained. Therefore, it is possible that some participants did not read the scenarios in Part A as carefully as hoped. Again, this concern would not apply to Part B which presented a direct and unambiguous task that could be completed in less than half the time required to complete Part A. In light of these

concerns, students' responses to the common 16 benefits in Part B may be more meaningful than those collected in Part A.

Subsequently, several factor analyses were conducted. Factor loadings equal to and higher than .30 were considered large enough to "warrant interpretation" (cf. Kerlinger, 1979, p. 189). The higher the factor loading the more the scenario or statement reflected the factor. Ultimately, six principal component factor analyses were conducted. In each analysis, the varimax rotation method was used and a limit of 4 factors was selected. This limit was chosen because two different types of responses were hypothesized. Consequently, if the underlying constructs were valid, they should appear within the first two or three factors.

First, a factor analysis was conducted based on all participants' ( $\underline{n} = 39$ ) responses to the scenarios in Part A. The following factor structure emerged. Loadings greater than 0.3 are presented in bold-face type.

### Table 3

### Factor Structure Generated for All Participants' on Part A

ltem	Scenario (Need Type)	1	2	3	4
A	Career Decision (Vocational)	-0.107	-0.001	0.272	0.846
В	Skill Development (Vocational)	0.759	-0.040	0.281	0.071
C	Support & Encouragement (Emotional/Social)	0.238	0.092	0.597	0.005
D	Perfectionism (Emotional/Social)	0.549	0.245	0.158	0.141
E	Ethical Development (Vocational)	0.483	0.046	0.026	0.628

F	Hands-on Experience (Vocational)	0.243	0.516	0.623	0.003
G	Academic Plan (Vocational)	0.425	0.363	0.273	0.390
Н	Friendship (Emotional/ Social)	-0.018	0. <b>196</b>	0.757	0.354
I	Personality (Vocational)	0.051	0.359	0.0 <b>86</b>	0.521
J	Interpersonal/Communication (Vocational)	0.894	0.093	-0.071	0.044
K	Sensitivity (Emotional/Social)	0.085	0.699	0.295	0.005
L	Self-Respect (Emotional/Social)	0.432	-0.148	0.542	0.140
Μ	Connection with Academics (Vocational)	0.034	0.845	0.139	0.1 <b>79</b>
N	Intellectual Stimulation (Vocational)	0.354	0.327	-0.415	0.594
0	Contacts in Work Field (Vocational)	0.126	0.779	-0.159	0.184
Р	Balancing Family and Career (Vocational)	0.576	0.163	0.406	-0.034

Six of the 11 vocational items (B, E, G, J, N, and P) loaded on factor 1, while only two emotional or social items (D and L) loaded on it. As a result, vocational needs appeared to underlie this factor. A similar factor structure emerged for factor 2. Six (F, G, I, M, N, and O) vocational items loaded on this factor, whereas only one emotional or social item (K) loaded on it. Therefore, factor 2 was also representative of vocational needs. The third factor represented a combination of vocational and emotional or social needs. Finally, five vocational items (A, E, G, I, and N) and only one emotional or social item (H) loaded on factor 4. Consequently, this factor also represented the hypothesized vocational needs factor. Ultimately, 62% of the total variance was explained by the four factors.

The factor structure that resulted from all participants' responses to the 21 statements in Part B was as follows.

Table 4

### Factor Structure Generated for All Participants on Part B

Item	Statement (Need Type)	1	2	3	4
AA	Role Modeling (Extra)	0.588	-0.456	0.130	-0.100
BB	Academic Plan (Vocational)	0.670	0.352	0.0 <b>89</b>	-0.256
CC	Skill Development (Vocational)	0.405	0.129	-0.464	0.455
DD	Personality (Vocational)	0.641	0.045	0.429	0.045
EE	Balancing Family and Work (Vocational)	0.427	0.074	0.091	0.660
FF	Hands-on Experience (Vocational)	0.424	0.270	-0.063	0.232
GG	Contacts in Work Field (Vocational)	0.587	0.478	-0.053	-0.014
ΗН	Support and Encouragement (Emotional/Social)	0.578	-0.397	-0.427	0.132
II	Loneliness (Extra)	0.572	-0.209	0.281	0.229
11	Friendship (Emotional/Social)	0.511	-0.492	0. <b>178</b>	0.020
КК	Career Goals (Extra)	0.540	-0.281	0.220	0.208
LL	Talent Goals (Extra)	0.502	0.365	0.316	0.162
MM	Perfectionism (Emotional/Social)	0.764	-0.173	0.0 <b>98</b>	0.150
NN	Intellectual Stimulation (Vocational)	0.368	0.011	-0.615	-0.338

00	Career Decision (Vocational)	0.518	0.132	-0.329	-0.339
PP	Self-Respect (Emotional/Social)	0.505	-0.123	0.311	-0.237
QQ	Interpersonal/Communication (Vocational)	0.468	0.550	-0.089	0.148
RR	Ethical (Vocational)	0.561	0.053	-0.505	0.0 <b>85</b>
SS	Broaden Interests (Extra)	0.624	-0.117	0.150	-0.594
ΤT	Connection with Academics (Vocational)	0.605	0.425	0.163	-0.318
UU	Sensitivity (Emotional/Social)	0.554	-0.462	-0.339	-0.029

All 21 items positively loaded on factor 1. Therefore, underlying this factor is a general positive response to mentoring relationships regardless of whether they address mentees' vocational or emotional or social needs. However, factor 2 represented a vocational needs factor. Four vocational items (B, G, Q, and T) loaded on this factor and the five emotional or social items (H, J, M, P, and U) negatively loaded on it. Furthermore, the extra statements which addressed mentees' need for mentors to assist them with issues of role modeling and loneliness (A and J) negatively loaded on factor 2. This was important given the emotional and social dimension of these items. Finally, factors 3 and 4 represented a combination of vocational and emotional or social items. The four factors accounted for 57% of the total variance.

No hypotheses were made about the factor structures that would emerge when all participants were pooled together. Nevertheless, these two analyses provide points of reference or contrast to what follows. In summary, they indicated that vocational elements are preeminent in the preferences expressed over the 16 scenarios, however, a distinction cannot be made regarding the 21 direct statements.

The following four analyses were performed after participants were assigned to the experimental group (those who had taken part in a creative, enrichment, or gifted program) or control group (those who had never taken part in a creative, enrichment, or gifted program). The following factor structure was generated from the experimental group's responses to Part A.

### Table 5

### Factor Structure Generated from the Experimental Group's Responses to Part A

ltem	Scenario (Need Type)	1	2	3	4
А	Career Decision (Vocational)	0.112	0.562	-0.186	0.655
В	Skill Development (Vocational)	0.160	0.260	0.751	0.059
C	Support & Encouragement (Emotional/Social)	0.108	0.605	0.080	0.018
D	Perfectionism (Emotional/Social)	0.050	0.145	0.733	0.265
E	Ethical Development (Vocational)	0.10 <b>8</b>	0.049	0.245	0.798
F	Hands-on Experience (Vocational)	0.618	0.578	0. <b>199</b>	0.058
G	Academic Plan (Vocational)	0.435	0.299	0.331	0.445
Н	Friendship (Emotional/Social)	0.088	0.859	0.025	0.1 <b>8</b> 9
I	Personality (Vocational)	0.204	0.275	0.182	0.479
J	Interpersonal/Communication (Vocational)	0.137	-0.157	0.806	0.272

К	Sensitivity (Emotional/Social)	0.813	0.248	0.201	0.057
L	Self-Respect (Emotional/Social)	-0.013	0.624	0.431	-0.044
М	Connection with Academics (Vocational)	0.793	0.106	-0.008	0.374
N	Intellectual Stimulation (Vocational)	0.271	-0.288	0. <b>189</b>	0.747
0	Contacts in Work Field (Vocational)	0.843	-0.090	0.121	0.211
Р	Balancing Family and Career (Vocational)	0.293	0.418	0.472	-0.072

# Table 6

# Factor Structure Generated from the Control Group's Responses to Part A

ltem	Scenario (Need Type)	1	2	3	4
А	Career Decision (Vocational)	0.063	-0.075	0.149	0.812
В	Skill Development (Vocational)	0.902	-0.207	0.001	-0.005
С	Support & Encouragement (Emotional/Social)	0.516	0.487	0.205	-0.484
D	Perfectionism (Emotional/Social)	0.057	0.839	-0.124	0.10 <del>6</del>
Е	Ethical Development (Vocational)	0.831	0.095	0.017	0.072
F	Hands-on Experience (Vocational)	0.231	0.555	0.059	-0.560
G	Academic Plan (Vocational)	0.639	0.370	-0.103	0.051
Н	Friendship (Emotional/Social)	0.035	0.720	0.324	0.050
I	Personality (Vocational)	0.045	0.015	0.807	0.281
J	Interpersonal/Communication (Vocational)	0.923	0.156	-0.082	-0.278
К	Sensitivity (Emotional/Social)	-0.050	0.005	0.846	-0.280

L	Self-Respect (Emotional/Social)	0.784	-0.205	0.148	0.249
Μ	Connection with Academics (Vocational)	-0.292	0.796	0.356	-0.270
N	Intellectual Stimulation (Vocational)	0.151	0.487	0.153	0.701
0	Contacts in Work Field (Vocational)	-0.022	0.259	0.752	0.262
Р	Balancing Family and Career (Vocational)	0.640	0.613	-0.266	-0.057

The experimental and control groups' responses to Part A generated similar factor structures. For both groups, vocational items loaded on factor 1 and a mixture of vocational and emotional or social items loaded on factors 2 and 3. Finally, vocational needs appeared to underlie factor 4 for both the experimental and the control group. In the case of the experimental group, 66% of the total variance was accounted for by the four factors. The four factors that emerged for the control group explained 76% of the total variance.

The factor structures generated from students' responses to Part B were clearer than those which emerged for Part A.

### Table 7

### Factor Structure Generated from the Experimental Group's Responses to Part B

Item	Statement (Need Type)	1	2	3	4
AA	Role Modeling (Extra)	0.459	0.004	0.160	0.628
BB	Academic Plan (Vocational)	0.234	0.693	0.311	-0.022

CC	Skill Development (Vocational)	0.152	0.314	-0.002	0.274
DD	Personality (Vocational)	0.277	0.442	-0.144	0.439
EE	Balancing Family and Work (Vocational)	0.292	0.424	-0.580	0.279
FF	Hands-on Experience (Vocational)	-0,109	0.338	-0.180	0.462
GG	Contacts in Work Field (Vocational)	0.107	0.702	0.151	0.219
нн	Support and Encouragement (Emotional/Social)	<b>0.68</b> 9	0.006	0.249	0.384
II	Loneliness (Extra)	0.722	0.285	-0.164	0.059
JJ	Friendship (Emotional/Social)	0.883	0.019	0.094	0.073
КК	Career Goals (Extra)	0,148	0.027	-0.177	0.844
LL	Talent Goals (Extra)	0.125	0.640	-0.252	0.1 <b>88</b>
MM	Perfectionism (Emotional/Social)	0.523	0.264	0.003	0.618
NN	Intellectual Stimulation (Vocational)	0,255	0.125	0.685	-0.018
00	Career Decision (Vocational)	-0.312	0.248	0.662	0.467
PP	Self-Respect (Emotional/Social)	0.595	0.207	0.0 <b>89</b>	0.121
ୄ୵ୄ	Interpersonal/Communication (Vocational)	0,029	0.762	0.022	-0.095
RR	Ethical (Vocational)	0.004	0.322	0.328	0.659
SS	Broaden Interests (Extra)	0.480	0.289	0.666	0.154
TT	Connection with Academics (Vocational)	0.092	0.726	0.320	0.146
UU	Sensitivity (Emotional/Social)	0.301	-0.130	0.410	0.786

Table 8

# Factor Structure Generated from the Control Group's Responses to Part B

Item	Statement (Need Type)	1	2	3	4
AA	Role Modeling (Extra)	-0.156	0.1 <b>76</b>	0.082	0 <b>.8</b> 78
BB	Academic Plan (Vocational)	0.232	0.536	0.418	0,606
CC	Skill Development (Vocational)	0.238	-0.345	0.779	0.207
DD	Personality (Vocational)	0.230	0.820	0.032	0.292
EE	Balancing Family and Work (Vocational)	0.876	-0.067	0.10 <b>6</b>	0.357
FF	Hands-on Experience (Vocational)	0.018	0.377	0.552	0.052
GG	Contacts in Work Field (Vocational)	-0.00 <b>8</b>	0.211	<b>0.788</b>	-0.153
HH	Support & Encouragement (Emotional/Social)	0.221	-0.185	0.367	0.607
II	Loneliness (Extra)	0.669	0.303	0.377	0.111
]]	Friendship (Emotional/Social)	0.105	0.384	-0.229	0.768
KK	Career Goals (Extra)	0.594	0.670	0.013	-0.082
LL	Talent Goals (Extra)	-0.466	0.685	0.341	0.302
MM	Perfectionism (Emotional/Social)	-0.025	0.355	0.713	0.247
NN	Intellectual Stimulation (Vocational)	0.281	0.000	0.685	0.505
00	Career Decision (Vocational)	0.497	0.615	0.340	0.259
PP	Self-Respect (Emotional/Social)	0.074	0.815	-0.028	-0.088
QQ	Interpersonal/Communication (Vocational)	0.315	0.081	0.767	0.120
RR	Ethical (Vocational)	0.324	-0.008	0.217	0.754
SS	Broaden Interests (Extra)	-0.247	0.792	0.299	-0.042

TT	Connection with Academics (Vocational)	-0.086	0.743	0.096	0.180
UU	Sensitivity (Emotional/Social)	0.817	-0.109	0.123	0.035

The factor structure that emerged for the experimental group supported the first hypothesis that students who had taken part in gifted, enrichment, or creative programs would prefer mentoring relationships that addressed psychosocial needs to those addressing vocational ones. Five mentoring items that addressed mentees' emotional or social needs loaded on factor 1 (HH, JJ, MM, PP, and UU). Two of the extra items that had a strong social or emotional dimension also loaded on it (AA and II). Nine of the 11 vocational items loaded on factor 2 (BB, CC, DD, EE, FF, GG, QQ, RR, and TT), while none of the emotional or social items loaded on this factor. Factors 3 and 4 represented items which addressed both types of needs. The four factors accounted for 62% of the total variance.

Equally noteworthy was the factor structure that resulted from the control group's responses to Part B. It supported the study's second hypothesis. Items addressing vocational and emotional or social needs loaded on factor 1, thereby indicating a more general liking for mentoring relationships as was found when all participants were pooled. A similar factor structure emerged for Factors, 2, 3, and 4. These data suggested that, as hypothesized, students who have not taken part in a gifted, enriched or creative program valued mentoring relationships that addressed

mentees' vocational needs as much as those that addressed emotional or social needs. Ultimately, 75% of the variance was explained by the four factors.

There are several explanations that may account for both groups' tendency to respond differently to Part A versus Part B. Participants may have been influenced by the concerns voiced earlier. In comparison to Part B, Part A was more ambiguous and required more time and task commitment.

Descriptive statistics were computed for the items in Parts A and B and may be found in Appendix F.

### CHAPTER 4

### DISCUSSION

The factor structures that resulted from the experimental and control groups' responses to Part B supported both hypotheses. First, students who had taken part in an enrichment, gifted, or creative program more strongly endorsed mentorships addressing psychosocial needs to those addressing vocational ones. All five emotional or social items and two extra items addressing psychosocial needs loaded on factor 1, while nine of the 11 vocational items loaded on factor 2. Second, students who had not taken part in such programming shared a more general preference for mentoring relationships regardless of whether they addressed vocational, emotional or social needs. For this group, neither a strong vocational need factor nor a strong emotional or social need factor emerged. Instead, a combination of vocational and psychosocial items loaded on factors 1 and 2.

In contrast, the factor structures resulting from the experimental and control groups' responses to Part A were less clear. As noted, there were psychometric problems inherent in Part A in that the items did not deal with unique and independent characteristics. Participants' responses may have been affected by extraneous factors such as the gender of the mentor or mentee, or the nature of the task pursued in the mentorship. Therefore, Part A was probably not designed well for a factor analysis and a qualitative analysis may have been more appropriate. On the other hand, this concern did not apply to Part B which consisted of brief and direct statements addressing various mentoring functions.

Given the significant results generated from Part B, both hypotheses warrant further investigation. Several suggestions can be made concerning the future use of the Mentoring Questionnaire (Appendix A). First, researchers are advised to omit Part A for the reasons stated above. Second, more psychosocial items should be included in the questionnaire. Presently, there is an unequal distribution of vocational and emotional or social need items—11 of the former and 5 of the latter. Furthermore, the extra items that appeared in Part B should be assigned a priori to one of the two need types. If neither of the need types adequately represent these items, a third need type should be created or the items should be excluded. Finally, if Part A is omitted, the first question in Part C must also be excluded as it asks participants to draw comparisons between Parts A and B.

A limitation of the present study concerns the distribution of the questionnaires. For 30 of the 39 participants, the questionnaire was delivered to their residence and they were encouraged to voice any concerns or questions they had while completing the it. As noted, one quarter of these students asked for further explanation concerning the term mentor either directly or indirectly. Several of these students also inquired whether or not they were to use the sample scale when rating the first scenario. Although the remaining nine students who received the questionnaires by mail were encouraged to telephone me if they had any concerns or questions, they may have felt uncomfortable doing so. As a result, some of these students may not have had a clear understanding of mentoring relationships. It is not known if they sought assistance from their parents. Although all nine participants completed the entire questionnaire, this concern should be considered in future studies.

Another limitation of this study was its relatively small sample size ( $\underline{n} = 39$ ). Subsequent researchers should strive to obtain a larger sample. In doing so, a more representative sample may emerge in terms participants' gender, age, and participation or nonparticipation in a mentorship and in a gifted, enrichment, or creative program. A larger sample would allow researchers to examine possible correlations among these variables and in relation to participants' preferences for mentorships. For instance, do females prefer mentorships addressing psychosocial needs to vocational ones, and, if so, is this preference influenced by whether or not they were mentored. It might also be interesting to examine if differences exist between mentorships that evolved naturally and those initiated by an outside agent such a school or community organization.

As stated, this study's hypotheses also require further empirical examination. If high ability and average students do prefer different types of mentorships, researchers must address why. Kelly and Cobb (1991) found that gifted students exhibited extensive knowledge regarding careers and issues related to career choice. Perhaps this finding provides some explanation for why gifted students may prefer mentoring relationships addressing emotional and social concerns. Although these students have unique psychosocial concerns and problems, these areas may receive less attention than those addressing their academic and vocational growth. Another possibility is that their academic and vocational needs are relatively well taken care of, particularly in comparison to the control group.

### Implications

Ultimately, identifying and understanding the nature of mentoring preferences could have important consequences on both a theoretical and practical level.

Theory. To date, few researchers have attempted to understand the development or outcomes of mentorships from a theoretical standpoint. Jacobi (1991) stated that although a wide range of broad theories has been proposed, "specific hypotheses suggested by these theories are implicit at best" (p. 522). The absence of a widely accepted operational definition of mentoring has also contributed to its weak theoretical base. The functions ascribed to mentors often vary across disciplines. Despite such inconsistency, several researchers (cf. Noe, 1988a, cited in Jacobi, 1991; Schockett & Haring-Hidore, 1985) have identified two primary types of mentoring functions in factor analytic studies, namely vocational and psychosocial. The factor analyses performed in the present study supported this dichotomy, yielding a vocational and a emotional or social needs factor, while linking this difference to variation in children's abilities. Furthermore, as found for the Presidential Scholars (Kaufmann et al., 1986), participants who had taken part in a gifted, enrichment, or creative program exhibited a preference for psychosocial mentoring functions. There has been no other empirical or theoretical research suggesting that high ability pupils prefer a particular type of mentoring relationship. Yet, if such a difference does exist, attempts to attain a universal definition of mentoring may not be practical. Instead,

researchers' time may be better spent exploring how mentoring is defined across domains (e.g., business versus educational) and different populations (e.g., across individuals' ability levels, gender, culture, age). Consequently, the theories that have been proposed to date may need to be extended or modified. Ultimately, greater effort needs to be invested in bridging the gap between empirical research and current theoretical models.

Practice. The results reported in this study are also important on a practical level. This knowledge could influence the role of mentoring programs as an integral part of gifted and talented programs. Until now, researchers have inadequately addressed how mentorships are particularly appropriate and in some ways unique educational experiences for high ability students. However, the present findings strongly suggest that mentors have an opportunity to address gifted children's social and emotional growth--two areas in which these students have unique characteristics and concerns. For example, gifted students must often deal with feelings of heightened sensitivity (Silverman, 1991) and loneliness and inadequacy (Feldhusen et al., 1989). Such information could also be of service to mentoring programs already serving high ability students. Coordinators could tailor mentor training programs according this group's needs. Adults who are mentoring gifted students may require additional guidance and preparation, especially if they have had few experiences with gifted individuals. Furthermore, if some mentors are unable to address such needs and issues, Clasen and Hanson's (1987) concept of double mentoring may be particularly appropriate.
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Appendix A		
Mentoring Questionnair	<u>e</u>	
MENTORING Q	UESTIONNAIRI	<u>E</u>
Gender		
Age		
Have you ever participat	ted in any Explorations P	rogram? (yes or no)
Have you ever participat	ted in any the following s	pecial programs? (yes or no)
Mentorship Program	Summer Enrichm	ent or Creative Program
French Immersion progr	am Gifted or E	nrichment Program
Name of the school that	you currently attend	
Have you ever had a me	ntor?(yes or no)	
If yes, have you l	had more than one mento	r? (yes or no)
If yes, how many	?	
If yes, how old w	ere you when you had a	mentor(s)? (1st mentor)
	(2nd mentor)	(3rd mentor)
Was your mentor	(s) a male or female? (1)	st mentor)
	(2nd mentor)	(3rd mentor)
How long did yo	ur mentorship(s) last? (1s	t mentorship)
	(2nd mentorship)	(3rd mentorship)
Do you still see or speak	to your mentor(s)? (Yes	or No) (1st mentor)
	(2nd mentor)	(3rd mentor)

# PART A

Mentoring refers to a learning partnership between two or more individuals, whereby a mentor guides an often younger and less experienced individual referred to as a "mentee". Not all mentoring relationships are the same. Some mentors play several roles/functions in the lives of mentees. For instance, mentors may assist mentees with their school work, in addition to helping them explore career options. However, other mentors may simply serve as friends to mentees, offering a listening ear and sharing their own life experiences. In both cases, the mentors may be greatly valued by mentees. Therefore, the type of role(s)/function(s) which mentors play do not necessarily determine the quality of mentoring relationships.

We are interested in the role(s)/functions(s) that you feel mentors should serve. Please read the following mentoring simulations and use the scale provided to indicate whether each mentoring relationship portrays the role(s)/function(s) that you think a mentor should fulfill. Please remember that this is not a test and there are no right or wrong answers. We are just interested in your opinion. Please respond to all of the items in Part A, B, and C of the Questionnaire.

#### Please circle your response.

1-----23-----4Not ValuableSlightly ValuableValuableAt AllValuableValuable

Karen was not sure whether she wanted to be a science teacher or an environmentalist. As a result, Karen's school assigned her to work with a mentor, Rachel, who worked in the field of environmental protection. During her senior year in high school, Karen spent every Friday afternoon at Rachel's workplace where she learned about the skills and knowledge needed to be an environmentalist. Rachel invited Karen to aid in the clean up of a local beach damaged by a recent oil spill. Karen saw first hand the damage to the ecosystem. Karen reported that her experiences with Rachel helped her decide to enroll in environmental studies when applying to universities.

I------4 Not Valuable At All Slightly Valuable Valuable Very Valuable

## 2.

Ellen enjoyed creating stories and was considered to be a talented writer by her teachers. Ellen planned to pursue her interest in writing when she attended university and eventually she wished to write fiction novels. Ellen reported that over the last year her mentor, Susan--an established writer in the community--helped her to sharpen her writing skills. One afternoon, Susan invited Ellen to bring in several of her short stories. Susan read these stories and made both critical and praiseworthy remarks regarding Ellen's character and plot development. Ellen felt that developing such skills would be instrumental in her advancement as a respected writer.

From a young age, Daniel was interested in drawing. However, Daniel rarely had an opportunity to discuss his art work until he began working with his mentor, Patricia. Patricia was a successful artist who worked with oil paints. Although Patricia's area of artistic expertise differed somewhat from Daniel's love for drawing, Patricia provided Daniel with support and encouragement throughout their mentorship. Patricia often invited Daniel to accompany her to the local museum, in addition to urging him to submit some of his own works in university art fairs. Daniel felt that there were many occasions when Patricia's encouragement pushed him to continue to draw despite other's criticism.

### 4.

Simon was regarded as a gifted concert violinist by his teachers and parents. Simon spent up to six hours a day practicing the violin. His parents often worried that Simon spent too much of his time attempting to perfect his talent and had a tendency to focus on his weakness, disregarding all that he had accomplished. However, when Simon met his mentor, Mark, his parents noticed a marked improvement in his appraisal of his performances. Mark, also a gifted musician, helped Simon to appropriately criticize his performances and set realistic goals. During their earlier meetings, Mark suggested that Simon videotape and critique his practice sessions in order that he could evaluate his own strengths and weaknesses. Simon agreed to do so. Once Simon presented his own critique, Mark offered additional feedback, praising Simon when he constructively criticized his performance and noting when Simon judged a practice session too harshly. When looking back at his mentoring relationship with Mark, Simon feels that it was this type of assistance which played a critical role in his perseverance as a musician and on a personal level.

Litsa, who was interested in a career in medicine, had an opportunity to interact with her mentor, Bridget, a physician. Among the many opportunities that Litsa gained from her mentoring relationship, she most valued the opportunity to grapple with medical ethics. Prior to her mentoring experience, Litsa had not considered that some medical practices such as in vitro fertilization might conflict with her personal belief system and values. By the suggestion of Bridget, however, Litsa wrote a paper which addressed both the pros and cons of in vitro fertilization. After reading Litsa's paper, Bridget, noted additional arguments which Litsa overlooked. Litsa felt that such an opportunity to explore her personal values was essential in determining her career direction.

I------4 Not Valuable At All Slightly Valuable Valuable Very Valuable

### **6**.

A career in civil engineering sounded interesting to Natalie, however, she was unsure of whether or not she had the skills to pursue such a career. Natalie's mentor, Sally, invited Natalie to join her engineering team every Thursday and Friday afternoon. Although Natalie realized that this opportunity would give her a chance to observe professional engineers, she was unaware of the hands-on experience she would gain. Throughout her mentorship, Natalie reported that she was able to practice her drafting skills and use her mathematics and computer knowledge. On several occasions, Natalie was allowed to accompany Sally to various job sites. Here, Natalie recorded data from the surveyors who also demonstrated some of the rudimentary skills of the profession. Natalie reported that gaining such hands-on experience led her to believe that a career in engineering was within her reach.

Paulette was interested in pursing a bachelor of science in nutrition when she entered university. She always invested a fair amount of time in her health and nutrition class and home economics elective, while making a minimal effort in her science classes. However, Paulette recently started to invest more time in her science classes due to her mentor's advice. Paulette's mentor, Larry, who was head of a nutrition department at a senior citizen residence, advised Paulette that chemistry was among several of the required courses for a nutrition degree. During several meetings, Larry and Paulette used the World Wide Web to gather information about which universities offered bachelor of science degrees in nutrition and the prerequisites needed to apply to such programs. Paulette felt that her mentor's advice played an important role in her academic plans.

l------3------3------4 Not Valuable At All Slightly Valuable Valuable Very Valuable

### 8.

Most of Jason's peers regarded his intense interest in physics and his eagerness in physics class as strange. Jason began to hide his interest in this field, until he met his mentor, Jennifer. Jennifer not only shared Jason's interest in physics, but a friendship developed between them. Jennifer often invited Jason to attend her university physics courses after which they would have an afternoon snack and discuss any concerns or problems Jason was experiencing. Jason valued his relationship with Jennifer and he no longer felt as lonely or isolated.

1------3------3------4 Not Valuable At All Slightly Valuable Valuable Very Valuable

Bill aspired to be a lawyer for some time. His school mentoring program, therefore, paired him with a mentor named Alan who worked in a nearby legal tirm. During their mentorship, Bill had an opportunity to visit his mentor's workplace. Here, Bill realized that although he loved learning about the law, he did not feel comfortable behaving in the aggressive manner which was modeled by his mentor in the courtroom. This feeling was confirmed, when Alan encouraged Bill to participate in a mock trial undertaken by Bill's law classmates. After having expressed such feelings with his mentor, Alan suggested that Bill might consider a career in law in which he could work outside of the courtroom. For this reason, Bill's focus shifted to a career in notarial law-- a career that would allow Bill to deal with the law, but which would be more appropriate in light of his gentle and soft-spoken temperament.

1		2		3		4
Not Valua	ble At All	Slightly '	Valuable	Valua	bie	Very Valuable

### 10.

Rebecca was interested in pursing a career in the field of psychology. Her mentor, Guy, worked as a psychologist for a mental health clinic in the community. Rebecca's mentor invited her to participate on several of the committees for which he is a member. Guy encouraged her to express her ideas and opinions on subjects which Rebecca was given time to investigate. Guy even provided Rebecca with an opportunity to chair smaller-scaled meetings during which she was required to swiftly and concisely respond to her fellow committee members. Rebecca valued such experiences as she felt that they enhanced her ability to deal with various types of people, in addition sharpening her communication skills.

1------3------3------4 Not Valuable At All Slightly Valuable Valuable Very Valuable

Sarah was said to be a talented ballerina by her teachers, peers, and parents. Despite such praise, Sarah was highly sensitive to what little criticism she did receive. Her parents were frequently concerned by her tendency to dwell on such criticism, instead of using it to improve her dance performances. As a professional dancer and mentor, Jill was of great assistance to Sarah. Jill invited Sarah to attend her own master classes where Jill accepted critiques offered by fellow dancers. Jill's teacher even offered to watch Sarah one afternoon and showed her how to use her hands gracefully. Sarah felt indebted to Jill for helping her learn how to welcome such criticism and use it constructively, on a professional and personal level.

]	22	3	4
Not Valuable At All	Slightly Valuable	Valuable	Very Valuable

## 12.

David's creative nature was admired by his classmates and teachers. Nevertheless, David was often embarrassed to share his ideas and submit his projects. However, when David met his mentor, Roberta, an actress, he developed greater confidence in himself and his ideas. Roberta frequently invited David to join her theatrical group where David appeared to feel less inhibited. Eventually, David even auditioned for several smaller theatrical parts, in addition to writing his own screen play. David reported that having an adult who he trusted and who respected his thoughts and feelings, led him to believe that he had something worthwhile to offer to others on both a creative and personal level.

1------3------4 Not Valuable At All Slightly Valuable Valuable Very Valuable

Thomas typically invested little effort in his school studies. He was, however, interested in animals and therefore began volunteering at a nearby veterinarian clinic. During Thomas' volunteer work at the clinic, he met a veterinarian, Ron, with whom he developed a mentoring relationship. Among the many things that Thomas learned at this clinic was the relevance of many school subjects. For instance, Ron demonstrated the usefulness of algebra as a peregrine falcon's tail was reconstructed. Subsequently, Thomas' knowledge of biology also proved useful when he and Ron explored the nature of common bacterial infections in animals. As a result of such experiences, Thomas began to invest more time in his school studies and obtain better grades.

1------3------3------4 Not Valuable At All Slightly Valuable Valuable Very Valuable

### 14.

Andrew often found his science classes boring and unchallenging and wondered whether or not there was anything interesting left for him to learn in the field of science. Upon being introduced to his mentor, Mary, who worked in a science laboratory as a microbiologist, Andrew began to change his mind. In the laboratory, Andrew was confronted with scientific problems which had no known solutions. For instance, Andrew had the opportunity to study cancer cells. He helped Mary collect and analyze such samples, along with formulating hypotheses about the growth of cancer cells. Andrew reported that he enjoyed working with his mentor because in such an environment he felt challenged and forgot that he was doing work.

 1------3------4

 Not Valuable At All
 Slightly Valuable

 Valuable
 Very Valuable

Steven aspired to be a sportscaster and over the last year he worked with his mentor, Liz, a successful sportscaster for a local radio station. In addition to exposing Steven to many tricks of the trade, Liz introduced Steven to a numbers of fellow sportscasters and radio producers. One morning, Liz even invited him to work with her producer who allowed Steven to announce the out of town scores during a broadcast. Steven greatly appreciated this opportunity to meet others in the field.



### 16.

Derek was interested in becoming a police officer and, as a result, his school introduced him to his mentor, Raymond. Raymond, a police officer of seven years, invited Derek to accompany him on some of his less dangerous calls and attend departmental briefings. In addition to learning about the specifics of police work, Derek also learned about the difficulties a police officer faces when attempting to integrate their family and professional life. As a father of two sons, Raymond frequently experienced difficulty spending time or planning family vacations with his children, particularly when he was assigned to late shifts or was on call. Furthermore, Raymond disclosed concerns regarding the dangerous nature of his work and his fear of not being present to see his sons reach adulthood. Nevertheless, Raymond also discussed the rewards of his job. Derek expressed that having an opportunity to observe and discuss such challenges with Raymond was among the most rewarding experiences of his mentoring relationship.

1-----3------4 Not Valuable At All Slightly Valuable Valuable Very Valuable

## PART B

Using the following scale, rate the degree to which you agree or disagree with the following statements, with 4 representing that you strongly agree with the statement and 1 representing that you strongly disagree with the statement.

Please circle your response.

1-----4 Strongly Disagree Agree Strongly Disagree Agree

Mentors should act as role models to mentees.

1		3	
_ •		J	······································
Strongly	Disagree	Agree	Strongly
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Disagice			Agree

## 2.

Mentors should help mentees identify the academic course(s) and degree/certificates(s) which are required of careers of interest:

1-----4 Strongly Disagree Agree Strongly Disagree Agree

## 3.

Mentors should help mentees to identify or develop the skills required for particular careers of interest:

1------2-----3------4 Strongly Disagree Agree Strongly Disagree Agree

### 4.

Mentors should help mentees determine whether or not they have a suitable personality for careers of interest:

	2	3	4
Strongly	Disagree	Agree	Strongly
Disagree			Agree

Mentors should address mentees' concerns about marrying and raising a family, while pursuing a career:

1-----2-----3-----4 Strongly Disagree Agree Strongly Disagree Agree

## 6.

Mentors should provide mentees with hands-on experience in the workplace:

1		3	4
Strongly	Disagrag	A groo	Strongly
Subligiy	Disagiee	Agree	Subligiy
Disagree			Agree

## 7.

Mentors should help mentees establish contacts with other professionals in mentors' fields of interest or workplace:

1	2	3	4
Strongly	Disagree	Agree	Strongly
Disagree			Agree

## 8.

Mentors should emotionally support or encourage mentees in their pursuits:

1-----4 Strongly Disagree Agree Strongly Disagree Agree

Mentors should help mentees deal with feelings of loneliness or isolation:

1-----4 Strongly Disagree Agree Strongly Disagree Agree

### 10.

Mentors should serve as friends to mentees:

1-----4 Strongly Disagree Agree Strongly Disagree Agree

## 11.

Mentors should help mentees set realistic career goals:

1-----4 Strongly Disagree Agree Strongly Disagree Agree

## 12.

Mentors should help mentees set realistic goals in terms of their talent development:

1			4
~ ·			<b>1</b>
Strongly	Disagree	Agree	Strongly
Disagree	-	-	Agree

Mentors should help mentees effectively deal with self-criticism:

1------2StronglyDisagreeAgreeAgreeAgree

## 14.

Mentors should provide challenging learning experiences for mentees on request:

		3	4
Strongly	Disagree	Agree	Strongly
Disagree	-	-	Agree

## 15.

Mentors should help mentees make decisions concerning career choices on request:

1-----4 Strongly Disagree Agree Strongly Disagree Agree

## 16.

Mentors should contribute (directly or indirectly) to enhancing mentees' self-respect:

1			4
Strongle	Diagram	A	Strongly
Strongly	Disagree	Agree	Strongry
Disagree			Agree

Mentors should provide opportunities for mentees to work in groups and develop communication skills:

1-----4 Strongly Disagree Agree Strongly Disagree Agree

## 18.

Mentors should introduce and help mentees address ethical issues related to careers of interest:

1-----4 Strongly Disagree Agree Strongly Disagree Agree

## 19.

Mentors should broaden mentees' interests:

1------3------4 Strongly Disagree Agree Strongly Disagree Agree

## 20.

Mentors should help mentees recognize the relevancy of their academic course work to careers of interest.

1-----4 Strongly Disagree Agree Strongly Disagree Agree

Mentors should help highly sensitive mentees cope with others' criticism.

1-----2StronglyDisagreeAgreeStronglyDisagreeAgree

# PART C

Having completed Part A and Part B of the Mentoring Questionnaire, in what way do you feel that these two parts are similar? Dissimilar? Do you think that Part A was assessing different qualities from those which were assessed in Part B?

Do you have any other comments or suggestions about the Mentoring Questionnaire or about the topic of mentors and student mentees?

Appendix B

Twenty-Seven References Initially Collected during the Literature Search

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Appendix C

Letter Requesting Students' Participation in the Study

March 17, 1997

#### **Dear Student and Parent:**

As part of a Master's Research Project at McGill University, we are interested in learning about the type of mentoring experiences that students think are valuable. We would like to invite students, who have and have not had a mentor, to complete a questionnaire and answer some general questions. Students under the age of 18 must obtain parental consent to participate in the study.

The Mentoring Questionnaire is divided into three parts. In Part A, you are asked to rate 16 mentoring simulations. In Part B, you are asked to rate the extent to which you agree or disagree with 21 statements which describe various roles that mentors can fulfill. Finally, in Part C you are asked to comment on whether you thought Part A and Part B of the questionnaire should remain separate or whether one of them should be excluded. You are encouraged to share any comments or suggestions that you might have about the questionnaire or mentors and students. Please note that you are also asked to indicate on the front page of the questionnaire whether or not you have ever participated in a special program (e.g., French Immersion Program, Summer Enrichment or Creative Program, etc.). It will take approximately 25 minutes to complete all parts of the questionnaire.

Participation in the study is voluntary and you may withdraw from the study at any time. Anonymity is guaranteed. The information which is collected will be locked in a laboratory.

There are no risks or discomfort that you could suffer as a result of completing this questionnaire. On the other hand, you can play an important role in helping educators understand the benefits which students can gain from mentoring programs.

If you and your parent(s) (if you are under 18) agree to your participation in this study, please mail or fax the enclosed consent form (the address and number are above and on the form) to:

Thank you very much for your consideration,

Kerry Casey (M.A. Student) Fax: (514) 398 -6968 Prof. Bruce M. Shore Direct Phone: (514) 398-4242 Appendix D

Consent Form

## Mentorship Research Study Consent Form

We have read the description of the mentorship study provided by Kerry Casey and agree to participate. We note that we may withdraw at any time.

Student's Name: \_\_\_\_\_ Signature \_\_\_\_\_ Date \_\_\_\_

Parent's Name: \_\_\_\_\_ Signature \_\_\_\_ Date \_\_\_\_\_ (Parent's signature required for students under 18 years of age)

Home Address:

Postal Code: \_\_\_\_\_

Home Telephone Number: (\_\_\_\_)

Please FAX to

Kerry Casey c/o Bruce M. Shore (514) 398-6968

or

\_\_\_\_\_

## Please MAIL to

Kerry Casey c/o Bruce M. Shore Education - McGill University 3700 McTavish Montreal, QC H3A 1Y2

A stamped-self-addressed envelope is enclosed.
# Appendix E

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#### Correlation Matrix

A B C	1.000				
DEFGHIJKLMNOPOCHMRFBJDQUPTNGEAIKL	0.139 0.166 0.032 0.350 0.155 0.353 0.445 0.337 -0.028 0.094 0.170 0.164 0.358 0.176 0.064 0.157 0.171 0.148 0.299 0.271 0.081 0.171 0.220 0.256 0.219 0.124 0.255 -0.019 0.212 0.213 0.247 0.333	1.000 0.325 0.297 0.300 0.270 0.368 0.171 0.662 0.244 0.503 0.038 0.135 0.088 0.135 0.088 0.417 0.225 0.411 0.232 0.420 0.285 0.233 0.230 0.222 0.334 0.229 0.301 0.229 0.357 0.122 0.357 0.122 0.250 0.419 0.354 0.271	$\begin{array}{c} 1.000 \\ -0.065 \\ 0.181 \\ 0.394 \\ 0.218 \\ 0.317 \\ 0.083 \\ 0.304 \\ 0.320 \\ 0.384 \\ 0.187 \\ -0.011 \\ 0.054 \\ 0.277 \\ -0.068 \\ 0.169 \\ 0.156 \\ 0.065 \\ 0.193 \\ 0.145 \\ -0.100 \\ 0.252 \\ 0.121 \\ -0.123 \\ 0.297 \\ 0.025 \\ 0.110 \\ 0.252 \\ 0.121 \\ -0.123 \\ 0.297 \\ 0.025 \\ 0.110 \\ 0.037 \\ 0.057 \\ 0.148 \\ 0.072 \\ 0.374 \\ 0.458 \\ 0.118 \\ \end{array}$	1.000 0.305 0.389 0.483 0.223 0.416 0.102 0.278 0.321 0.233 0.130 0.433 0.209 0.184 0.406 0.448 0.151 0.144 0.343 0.009 0.043 -0.009 0.043 -0.009 0.259 0.043 -0.009 0.259 0.043 -0.009 0.259 0.043 -0.009 0.259 0.043 -0.009 0.259 0.043 -0.009 0.259 0.043 -0.009 0.259 0.086 0.108 0.338 0.313 0.241 0.279 0.153 0.173	1.000 0.178 0.416 0.251 0.265 0.425 0.157 0.262 0.523 0.097 0.290 0.314 0.118 0.358 0.509 0.437 -0.099 0.394 0.281 0.367 0.328 0.488 0.269 0.218 0.225 0.375 0.300 0.476 0.373 0.461 0.325
	F	G	н	I	I

M N O P OOC H MR F B J D Q U P T N G E A I	$\begin{array}{c} 0.511\\ 0.076\\ 0.248\\ 0.478\\ 0.359\\ 0.118\\ 0.360\\ 0.320\\ 0.227\\ 0.233\\ 0.331\\ 0.361\\ -0.041\\ 0.038\\ 0.362\\ 0.202\\ 0.300\\ 0.144\\ 0.226\\ -0.030\\ 0.121\\ 0.179\end{array}$	$\begin{array}{c} 0.410\\ 0.261\\ 0.291\\ 0.300\\ 0.357\\ 0.050\\ 0.406\\ 0.341\\ 0.246\\ -0.151\\ 0.219\\ 0.187\\ 0.276\\ 0.067\\ 0.385\\ 0.205\\ 0.424\\ 0.341\\ 0.375\\ 0.187\\ 0.146\\ 0.411\\ \end{array}$	0.393 -0.045 0.073 0.395 0.143 0.081 0.204 0.395 0.019 0.167 0.281 0.188 0.139 0.125 0.132 0.161 0.346 0.007 0.199 0.123 0.108 0.334	0.247 0.249 0.393 0.062 0.453 0.119 0.034 0.291 -0.043 0.209 0.101 0.028 0.295 0.110 0.190 0.060 0.282 0.128 0.191 0.010 0.097 0.172	0.094 0.367 0.188 0.416 0.072 0.115 0.197 0.356 0.211 -0.033 0.265 0.226 0.193 0.284 0.247 0.141 0.236 0.263 0.263 0.411 0.356 0.327 0.327
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KLMNOPOCHMRFBJDQUPTNGEAIKLLS	$\begin{array}{c} 1.000\\ 0.255\\ 0.540\\ 0.116\\ 0.474\\ 0.103\\ 0.187\\ 0.071\\ 0.247\\ 0.201\\ -0.068\\ 0.045\\ -0.067\\ 0.153\\ -0.017\\ -0.150\\ 0.417\\ 0.150\\ 0.417\\ 0.150\\ 0.154\\ -0.016\\ 0.164\\ -0.084\\ 0.037\\ 0.015\\ 0.042\\ 0.251\\ 0.348\end{array}$	$\begin{array}{c} 1.000\\ -0.075\\ 0.033\\ 0.023\\ 0.334\\ 0.161\\ 0.316\\ 0.298\\ 0.365\\ 0.246\\ 0.046\\ 0.174\\ 0.240\\ 0.305\\ 0.160\\ 0.218\\ -0.031\\ 0.236\\ -0.138\\ 0.143\\ 0.216\\ 0.276\\ 0.351\\ 0.366\\ 0.370\\ 0.140\end{array}$	$\begin{array}{c} 1.000\\ 0.368\\ 0.545\\ 0.200\\ 0.430\\ 0.109\\ 0.374\\ 0.276\\ 0.311\\ 0.202\\ 0.191\\ 0.141\\ 0.031\\ -0.077\\ 0.554\\ 0.098\\ 0.309\\ 0.238\\ 0.386\\ -0.086\\ 0.078\\ 0.135\\ 0.187\\ 0.132\\ 0.507\end{array}$	1.000 0.459 0.093 0.158 0.144 0.267 0.381 0.018 0.274 0.234 0.146 0.336 0.320 0.129 0.076 0.160 0.510 -0.064 0.224 0.224 0.226 0.279 0.398	$\begin{array}{c} 1.000\\ 0.227\\ 0.246\\ 0.102\\ 0.174\\ 0.265\\ -0.004\\ 0.279\\ 0.189\\ 0.200\\ 0.170\\ 0.251\\ 0.390\\ 0.207\\ 0.251\\ 0.390\\ 0.207\\ 0.261\\ 0.444\\ -0.290\\ 0.196\\ -0.011\\ 0.065\\ 0.114\\ 0.512\end{array}$

	Р	00	CC	нн	MM
POCCHMRRFBJDQUPTNGEA	$\begin{array}{c} 1.000\\ 0.187\\ 0.294\\ 0.559\\ 0.538\\ 0.258\\ 0.248\\ 0.268\\ 0.418\\ 0.165\\ 0.121\\ 0.499\\ 0.429\\ 0.051\\ 0.266\\ 0.108\\ 0.159\\ 0.576\\ 0.320\\ 0.388\\ -0.138\\ 0.215\end{array}$	$\begin{array}{c} 1.000\\ 0.172\\ 0.237\\ 0.353\\ 0.387\\ 0.258\\ 0.327\\ -0.069\\ 0.295\\ 0.265\\ 0.493\\ 0.100\\ 0.411\\ 0.324\\ 0.237\\ -0.005\\ 0.153\\ 0.060\\ 0.321\\ 0.160\\ 0.442 \end{array}$	$\begin{array}{c} 1.000\\ 0.377\\ 0.284\\ 0.365\\ 0.310\\ 0.085\\ 0.258\\ -0.032\\ 0.471\\ 0.192\\ -0.062\\ 0.064\\ 0.286\\ 0.255\\ 0.211\\ 0.234\\ 0.248\\ 0.129\\ 0.305\\ 0.021 \end{array}$	1.000 0.451 0.469 0.147 0.246 0.524 0.172 0.071 0.515 0.215 0.065 0.454 0.245 0.305 0.438 0.423 0.219 0.074 0.301	1.000 0.226 0.391 0.395 0.471 0.280 0.498 0.429 0.320 0.190 0.424 0.419 0.545 0.395 0.409 0.350 0.313
	RR	FF	88	LL	DD
RF BB JD QU PT NG EA IKLS	1.000 0.201 0.334 0.179 0.217 0.303 0.479 0.058 0.357 0.396 0.272 0.319 0.386 0.204 0.346 0.263 0.229	1.000 0.347 0.000 0.266 0.248 0.147 0.225 0.183 0.105 0.325 0.212 0.048 0.213 0.319 0.212 0.058	1.000 0.234 0.378 0.453 0.119 0.394 0.586 0.289 0.563 0.221 0.323 0.309 0.159 0.329 0.443	1.000 0.251 0.082 0.243 0.400 0.143 0.111 0.017 0.090 0.324 0.559 0.270 0.251 0.474	1.000 0.240 0.264 0.339 0.455 -0.007 0.360 0.401 0.221 0.410 0.464 0.384 0.365
	QQ	συ	PP	Π	NN
QQ UU PP TT NN GG EE	1.000 -0.081 0.199 0.305 0.183 0.458 0.237	1.000 0.124 0.134 0.227 0.256 0.168	1.000 0.251 0.256 0.178 0.150	1.000 0.202 0.513 0.192	1.000 0.225 0.008

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		The	e Particular Valu	e of Mentorships	109
AA II KK LL SS	0.250 0.200 -0.048 0.312 0.128	0.408 0.244 0.499 -0.021 0.336	0.256 0.178 0.284 0.225 0.400	0.076 0.264 0.201 0.454 0.511	0.210 0.065 -0.054 -0.118 0.335
	GG	EE	AA	11	ĸĸ
GG	1.000	1 000			
EE	0.213	1.000	1 000		
AA II	0.179	0.407	0.222	1.000	
кк	0.082	0.282	0.320	0.354	1.000
LL SS	0.374 0.241	0.281 -0.181	0.007 0.259	0.274 0.472	0.253 0.270
	LL	SS			
LL	1.000				

SS 0.344 1.000

# Appendix F

## Descriptive Statsistics

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	A	B	С	D	E
N OF CASES MINIMUM MAXIMUM MEAN STANDARD DEV	39 2.000 4.000 3.128 0.615	39 1.000 4.000 3.077 0.807	39 1.000 4.000 3.128 0.864	39 1.000 4.000 2.846 1.040	39 1.000 4.000 2.949 0.887
	F	G	Н	I	J
N OF CASES MINIMUM MAXIMUM MEAN STANDARD DEV	39 1.000 4.000 3.256 0.751	39 1.000 4.000 2.897 0.912	39 1.000 4.000 3.487 0.823	39 1.000 4.000 2.974 0.778	39 1.000 4.000 2.897 0.754
	к	L	М	N	0
N OF CASES MINIMUM MAXIMUM MEAN STANDARD DEV	39 1.000 4.000 3.231 0.842	39 1.000 4.000 3.154 0.812	39 1.000 4.000 3.333 0.869	39 2.000 4.000 3.051 0.686	39 1.000 4.000 2.897 0.852
	P				

N OF CASES	39
MINIMUM	1.000
MAXIMUM	4.000
MEAN	3.205
STANDARD DEV	0.656

	AA	BB	CC	DD	EE
N OF CASES	39	39	39	39	39
MINIMUM	1.000	2.000	.2.000	1.000	1.000
MAXIMUM	4.000	4.000	4.000	4.000	4.000
MEAN	3.256	3.051	3.282	2.615	2.282
STANDARD DEV	0.677	0.686	0.647	0.990	0.944
	FF	GG	нн	П	11
N OF CASES	39	39	39	39	39
MINIMUM	2.000	2.000	2.000	1.000	1.000
MAXIMUM	4.000	4.000	4.000	4.000	4.000
MEAN	3.333	3.128	3.590	3.231	3.538
STANDARD DEV	0.701	0.732	0.595	0.777	0.643
	KK	ĹL	MM	NN	00
N OF CASES	39	39	39	39	39
MINIMUM	1.000	1.000	1.000	2.000	1.000
MAXIMUM	4.000	4.000	4.000	4.000	4.000
MEAN	3.256	3.205	3.333	3.256	3.103
STANDARD DEV	0.850	0.767	0.621	0.595	0.680
	PP	QQ	RR	SS	TT
N OF CASES	39	39	39	39	39
MINIMUM	2.000	2.000	1.000	1.000	1.000
MAXIMUM	4.000	4.000	4.000	4.000	4.000
MEAN	3.282	3.128	2.974	3.077	3.256
STANDARD DEV	0.724	0.656	0.811	0.839	0.751

## UU

N OF CASES	39
MINIMUM	1.000
MAXIMUM	4.000
MEAN	3.308
STANDARD DEV	0.766







IMAGE EVALUATION TEST TARGET (QA-3)







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