JSGE
The Journal of Secondary Gifted Education
Vol. XVII, No. 2, Winter 2006, pp. 65–75. 

# Effects of a Summer Program on the Social Self-Concepts of Gifted Adolescents

Anne N. Rinn
Western Kentucky University

This study investigates the change in social self-concept among adolescents participating in a summer program for the gifted. Participants include 140 gifted students who had completed the 7th through 10th grade during the previous academic year. Social self-concept was measured at the beginning and end of the summer camp using the same-sex peer relations and the opposite-sex peer relations subscales of the Self-Description Questionnaire II (Marsh, 1990). Results indicate both males and females experienced an increase in their perceived same-sex peer relations and their perceived opposite-sex peer relations over the course of the summer program. Conclusions and implications for education policy are discussed.

The self-concepts of gifted children and adolescents are frequently examined in literature regarding the effects of specialized programs for the gifted, such as pull-out programs within schools (Moon, Feldhusen, & Dillon, 1994), residential high schools (Manor-Bullock, 1994), and summer programs (Enerson, 1993). A change in environment can influence a student's self-perception, leading educators and researchers to be concerned about the potential effects of such programs. An increase in self-concept, for example, is often seen as one indicator of the effectiveness of gifted programming (Vaughn, Feldhusen, & Asher, 1991), and a decrease in self-concept often calls into question the usefulness of such programs (Marsh & Parker, 1984). For the most part, students' academic or general self-concepts are examined in such studies.

Most researchers in the field of gifted education examine self-concept with a theoretical understanding that self-concept is both multifaceted and hierarchical (Shavelson, Hubner, & Stanton, 1976). Self-concept is multifaceted, in that individuals view different facets of themselves in different ways, and is hierarchically arranged "with perceptions of behavior at the base moving to inferences about self in sub areas (e.g., academic—English, science, history, mathematics), then to inferences about self in general" (Marsh & Shavelson, 1985, p. 107). Self-concept can thus be defined as "a person's perceptions of him- or herself . . . formed through experience with and interpretations of one's environment" (Marsh & Shavelson, p. 107). Academic self-concept refers to one's perceptions of his or her academic abilities. Further, "social self-concept represents one's perception of his or her social competence with respect to social interaction with others and derives from the assessment of one's behavior within a given social context" (Byrne & Shavelson, 1996, p. 601). Within the current study, an adolescent's *social context* can be defined as a residential summer program for gifted students.

Currently, relative to academic self-concept and general self-concept, less is known about the social self-concepts of gifted students (Bain & Bell, 2004). Similarly, very little is known about the effects of participating in a summer program on the social self-concepts of gifted students (Manor-Bullock, 1994). The following review of the literature will explore what is known about the social self-

concepts of gifted students and the effects of participating in a summer program for the gifted.

## Review of the Literature

### Social Self-Concepts of Gifted Students

Research findings regarding the social self-concepts of gifted students are somewhat mixed, particularly in comparison to students of other ability levels. Some research indicates that gifted students have higher social self-concepts, some indicates gifted students have lower social self-concepts, and some indicates no difference. For example, in a study of 26 gifted children and 67 high-achieving children, Bain and Bell (2004) found the gifted children had significantly higher self-concepts in the area of peer relations than the high-achieving children. Likewise, Kelly and Colangelo (1984) examined the self-concepts of gifted students, students of average ability, and students with special needs in grades seven through nine. They found gifted students had significantly higher social self-concepts than their nongifted peers.

On the other hand, some researchers have indicated that gifted students experience lower social self-concepts than students of other ability levels. Among both males and females, gifted adolescents have reported lower intimacy in their same-sex relationships than nongifted adolescents (Mayseless, 1993). Further, in a study of 148 gifted adolescents, Stocking, Porter, Goldstein, and Oppler (1993) found approximately 20% of both males and females scored below the 25th percentile on the opposite-sex relationships subscale of the Self-Description Questionnaire III (Marsh, 1990). In addition, although not always the case (see Norman, Ramsay, Roberts, & Martray, 2000), highly gifted students may experience even lower social self-concepts than other gifted students, such that the higher the ability, the higher the risk for social difficulty (Brody & Benbow, 1986). Indeed, those gifted students most dissimilar in academic ability from their peers have reported a lesser interest in opposite-gender relationships, which may lead to a lower level of popularity (Ablard, 1997). In turn, this effect is likely reciprocal. Unpopular high-ability students have been shown to have lower social self-concepts than average and popular high-ability students (Cornell, 1990).

Perhaps because of the mixed findings regarding the social self-concepts of gifted students in relation to other students, Hoge and Renzulli (1993), in a meta-analysis of studies involving the self-concepts of gifted students, found no differences between gifted children and average-ability children with regards to social self-concept. In comparison to other facets of gifted students' self-concepts (i.e., general and academic), though, they found that gifted students had lower social self-concepts than either general or academic self-concepts. To illustrate, Ross and Parker (1980), in a study of 63 gifted males and 84 gifted females in the fifth through eighth grades, found both males and females had significantly higher academic self-concepts than social self-concepts.

Other reasons for discrepancies in research findings regarding the social self-concepts of gifted students also exist. For example, as social self-concept likely becomes increasingly differentiated with age (Byrne & Shavelson, 1996), comparing the social self-concepts of samples of children, early adolescents, and late adolescents may result in different findings. Further, the use of different self-concept instruments that are based on different theoretical conceptions can lead researchers to draw different conclusions regarding social self-concept. Finally, a consideration of the effect sizes in the research articles regarding the social self-concepts of gifted adolescents would provide further insight into the inconsistencies previously mentioned. However, as is not uncommon in gifted education research (see Paul & Plucker, 2004; Plucker, 1997), effect sizes are not often included in the findings.

Social self-concept is likely gender specific for early and late adolescents (Marsh, 1990), although the research findings are mixed in this regard as well. Some studies reported no gender differences with regards to the social self-concepts of gifted students (e.g., Kelly & Jordan, 1990; Pyryt & Mendaglio, 1994), and others reported significant gender differences (e.g., Leroux, 1988), such that females usually have higher social self-concepts than males (Worrell, Roth, & Gabelko, 1998). Again, discrepancies in these findings could be due to using differing age groups (early adolescents versus late adolescents), different self-concept instruments, and different theoretical definitions of self-concept, among other reasons.

### Effects of Summer Programs for the Gifted

Summer programs for gifted students may vary in length and/or focus, but most have several components in common: an accelerated and enriched curriculum, dedicated faculty members, peer interaction with others of similar ability, and a supportive and encouraging environment (Olszewski-Kubilius, 2003). Although most programs focus on meeting academic needs, activities are often planned to promote peer acceptance and social growth (Lenz & Burruss, 1994). Because gifted students sometimes report feeling different from others and/or

report that others see them as different (Coleman & Cross, 1988), placing gifted students with other like-minded peers may enhance feelings of acceptance. Thus, summer programs may help meet gifted students' academic, social, and psychological needs (Enerson, 1993).

As mentioned earlier though, a concern regarding summer programs for the gifted, as well as with other specialized programming, is the affective response of students who participate in such programs. Although gifted students as a whole generally have high academic self-concepts (Hoge & Renzulli, 1993), some researchers are concerned about the effects of gifted programs on the various components of the self-concepts of gifted students. For example, Marsh and Parker (1984) argued that gifted students will experience a decrease in academic self-concept upon entering a gifted program because of a change in reference group. Being suddenly surrounded by peers of equal ability may challenge a gifted student's prior perceived level of competence. These findings have been replicated numerous times (e.g., Marsh & Hau, 2003; Tymms, 2001). However, researchers have also found an increase in the academic self-concepts of gifted students who participate in special programs (e.g., Rinn, 2005). With specific regard to a summer program, and regardless of gender or age level, the general self-concepts of gifted students increased after 2 weeks spent in a residential summer program (Kolloff & Moore, 1989). Further, Parker (1998) indicated that creatively gifted students experienced an increase in various components of self-concept after participating in a 2-week summer program.

While the short-term effects of a summer program for the gifted may be mixed, long-term benefits of participating in a gifted program are largely positive, including an increase in self-confidence, increased motivation, an increase in basic thinking skills, and an increase in autonomous learning (Moon et al., 1994, p. 43). A 15-year longitudinal study concerning the impact of a program for the gifted indicated a largely positive impact on the lives and attitudes of the students involved (Humes & Campbell, 1980). Similarly, a 4-year longitudinal study showed that participants experienced an increase in academic achievement, increased interest in learning, an increase in self-esteem, and an increase in their ability to get along with peers and adults after participating in a summer program for the gifted (Thomas, 1989).

Regarding changes in social self-concept after participating in a summer program, less empirical research is available. Among high school juniors attending a summer residential program for the gifted, Brookby (2004) reports a significant increase in social self-concept as a result of participating in the program, as did Olszewski, Kulieke, and Willis (1987) in their study of more than 400 junior high school students. However, Manor-Bullock (1994) reported a significant decrease in same-sex peer relations, but no change in opposite-sex peer relations, among students participating in a residential program for high school juniors and seniors. Although not specifically related to the effects of a summer program, other researchers have examined the effects of gifted programs on the social self-concepts of gifted adolescents. For example, gifted adolescents who transitioned to a congregated high school classroom were found to experience a significant increase in self-perceptions related to romantic appeal and close friendships (Wright & Leroux, 1997).

## Current Study

The purpose of the current study is to examine the effects of participating in a summer program on the social self-concepts of gifted adolescents. Specifically, this study will explore the changes in gifted males' and gifted females' perceived same-sex peer relations and opposite-sex peer relations after participating in a 3-week residential summer program. Understanding the changes in social self-concept among gifted adolescents is important for theoretical, practical, and policy-related reasons.

Most theories in the field of gifted education focus on the academic experiences of gifted students, including the big-fish-little-pond effect (Marsh & Parker, 1984), the internal/external frame of reference model (Marsh, 1986; Plucker & Stocking, 2001), and the reflected glory effect (Marsh, Kong, & Hau, 2000). Although researchers have examined the social dimension of gifted students' experiences, most researchers are still calling for more work in this area (e.g., Plucker & Stocking). This paper will contribute to that call.

Further, while most adolescents undergo similar developmental changes (Erikson, 1963), gifted students may handle these changes in a different manner than their non-gifted peers (Dixon, 1998). Assuming a gifted adolescent will thrive in a summer camp with other gifted adolescents makes sense, anecdotally, but little research has examined the longitudinal effects of a summer program on the social experiences of gifted adolescents, particularly by gender. Byrne and Shavelson (1996), in their examination of the structure of social self-concept, emphasized the need to consider gender when examining the social self-concepts of a group of adolescents.

As summer programs and extracurricular gifted programs become increasingly popular due to the continued decline in funding for gifted programs within public schools (Gallagher, 2004; Purcell, 1993; Spielhagen &

Cooper, 2005), in-depth examination of the academic and social effects of such out-of-school programs is warranted. If gifted students have limited access to like-minded peers within the public school setting, their social self-concepts may seriously be threatened. However, we currently have limited understanding of the effects of academic summer programs on the social self-concepts of gifted adolescents. Understanding how academic summer programs affect the social self-concepts of gifted adolescents may provide parents, teachers, and policy-makers with some evidence that summer programs can provide gifted adolescents with a social outlet that public schools cannot. Or, if academic summer programs do not affect the social self-concepts of gifted adolescents, educators, program directors, and policy-makers can work together to create an academic experience that also effectively influences the social lives of gifted adolescents.

## Method

### Participants

Participants were recruited from a residential summer camp for mathematically and verbally gifted students held at a comprehensive university in the south. This particular summer camp has been in operation for more than 20 years. The summer camp is a 3-week residential program for gifted students entering the 8th, 9th, 10th, or 11th grades the following school year. To qualify for participation in this summer camp, students must have been eligible to attend talent search summer programs (e.g., through the Duke Talent Identification Program) within the past 4 years.

The summer camp involves 6 hours of class and 1 hour of study hall per day, 5 days a week, for 3 weeks. The students have a variety of courses from which to choose (e.g., Humanities, Psychology, Mathematics, etc.), and they enroll in only one course. The students also engage in various social activities (e.g., board games, athletic activities, a talent show, etc.) after class each day and on weekends. A typical weekday included breakfast, class from 8:45 a.m. to 12 p.m. (including a 15-minute break), lunch, class from 1 p.m. to 4:15 p.m. (including a 15-minute break), a social activity, dinner, a social activity, study hall from 7 p.m. to 8 p.m., and another social activity.

A total of 140 gifted adolescents participated in this study. Approximately 56% of the participants were male and 44% were female. The mean age of the participants was 14.3. Approximately 84% of the participants were White. Complete demographic information can be found in Table 1.

Table 1

**Demographic Information (*N* = 140)**

| | Frequency | Percentage |
|---|---|---|
| Gender | | |
| Male | 78 | 55.7 |
| Female | 62 | 44.3 |
| Age | | |
| 12 | 6 | 4.3 |
| 13 | 35 | 25.0 |
| 14 | 31 | 22.1 |
| 15 | 45 | 32.1 |
| 16 | 23 | 16.4 |
| Grade Completed | | |
| 7th | 32 | 22.9 |
| 8th | 32 | 22.9 |
| 9th | 44 | 31.4 |
| 10th | 32 | 22.9 |
| Race/Ethnicity | | |
| American Indian/Alaska Native | 1 | 0.7 |
| Asian or Pacific Islander | 15 | 10.7 |
| Black/African American | 1 | 0.7 |
| White | 117 | 83.6 |
| Not indicated | 6 | 4.3 |

### Materials

*Demographic Information.* Participants were given a demographic questionnaire to assess gender and age, among other pieces of data. Other information was gathered from participants' applications for summer camp participation, including ethnic background, grade level, and SAT/ACT score.

*Social Self-Concept.* The Self Description Questionnaire II (SDQ-II) was designed to measure the self-concepts of young adolescents aged 13–17, and is theoretically based on the notion that self-concept is multidimensional and hierarchically structured (Marsh, 1990; Shavelson et al., 1976). The SDQ-II measures self-concept in the following areas: mathematics, verbal, general-school, physical abilities, physical appearance, same-sex peer relations, opposite-sex peer relations, parent relations, emotional stability, honesty/trustworthiness, total academic, and general-self. Extensive support for the reliability and validity of the SDQ-II has been reported in other research (see Gilman, Laughlin, & Huebner, 1999; Plucker, Taylor, Callahan, & Tomchin, 1997).

Table 2

**Means, Standard Deviations, and Alpha Coefficients for Males and Females at Measurement Times 1 and 2**

| Measure | Time 1 | | Time 2 | |
|---|---|---|---|---|
| | *M* (*SD*) | α | *M* (*SD*) | α |
| Same Sex Relationships | | | | |
| Males | 4.95 (1.06) | 0.94 | 5.16 (1.00) | 0.96 |
| Females | 4.95 (0.82) | 0.90 | 4.99 (0.82) | 0.90 |
| Opposite Sex Relationships | | | | |
| Males | 4.50 (1.10) | 0.91 | 4.73 (1.01) | 0.92 |
| Females | 4.46 (0.98) | 0.89 | 4.62 (0.93) | 0.89 |

For the purposes of this study, only the same-sex peer relations and the opposite-sex peer relations subscales were used in order to measure social self-concept. The same-sex peer relations subscale measures interactions with peers of the same sex. A sample item from this subscale is, "Not many people of my own sex like me" (Marsh, 1990, p. 4). From the normative sample, internal consistency was reported as 0.86 and factor loadings ranged from 0.57 to 0.68 (five items).[1] The opposite-sex peer relations subscale measures interactions with peers of the opposite sex. A sample item from this subscale is, "I have lots of friends of the opposite sex" (Marsh, p. 3). Internal consistency was reported as 0.90 and factor loadings range from 0.69 to 0.78 (four items). Within the current sample, reliability coefficients for scores obtained at Time 1 and Time 2 on both subscales can be seen in Table 2. Reliability does not increase if any items are deleted on either subscale.

## Procedure

Parental consent was obtained prior to the start of the summer program. During the first night at the program, students whose parents gave consent were invited to take part in the study. Data was gathered on the second night of the program, and again 2 days before the program ended. Time 1 and Time 2 data were thus gathered about 2 ½ weeks apart.

# Results

To assess the changes in social self-concept among males and females enrolled in a summer camp for the gifted, several analyses were used. First, a series of independent *t*-tests was used to assess potential differences between males and females with regards to SAT scores[2], as well as each dependent variable at Time 1. No significant differences were found between males' and females' SAT scores ($t$ = -1.61, $p$ = 0.11), the means of which were 1001 and 1034, respectively. In addition, no significant differences were found between males' and females' same-sex peer relations scores at Time 1 ($t$ = 0.01, $p$ = 0.99), or opposite-sex peer relations scores at Time 1 ($t$ = 0.22, $p$ = 0.83). The means and standard deviations of each variable at Time 1 and at Time 2 can be found in Table 2.

The effects of time (Time 1 and Time 2) were separately tested for males and females with repeated measures analysis of variance (ANOVA) for both dependent variables, namely same-sex peer relations and opposite-sex peer relations. In addition, the interactions of gender (male and female) and time (Time 1 and Time 2) were tested with a 2 x 2 repeated measures ANOVA for both dependent variables. Although academic ability has been related to social self-concept in previous research (e.g., Colangelo, Kelly, & Schrepfer, 1987), which suggests SAT scores should be used as a covariate, there were no significant relationships between academic ability and social self-concept measures in the current study. Thus, a covariate was not included in the following analyses.

## Same-Sex Peer Relations

No statistically significant differences were found between males and females regarding their average same-sex peer relations scores ($F$ = 0.27, $p$ = 0.60). However, a significant difference was found from scores at Time 1 to scores at Time 2 ($F$ = 7.66, $p$ < 0.01, partial eta squared = 0.05). This change over time is slightly dependent on gender ($F$ = 4.83, $p$ < 0.05, partial eta squared = 0.04). A plot of the estimated marginal means of same-sex peer relations can be seen in Figure 1.

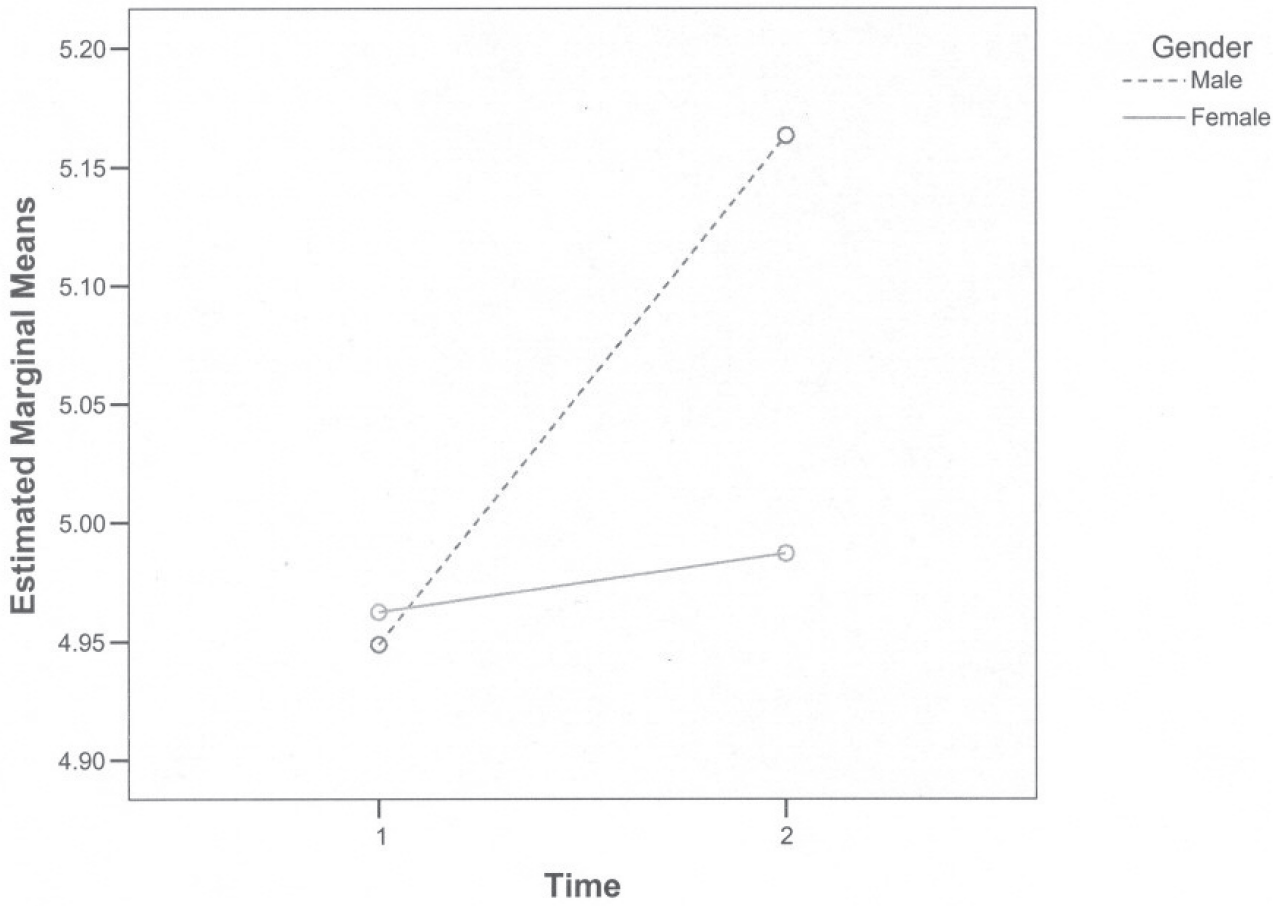


Figure 1. Estimated marginal means of same-sex relationships across time for males and females

### Opposite-Sex Peer Relations

No statistically significant differences were found between males and females regarding their average opposite-sex peer relations scores ($F = 0.13$, $p = 0.72$). However, a significant difference was found from scores at Time 1 to scores at Time 2 ($F = 16.24$, $p < 0.001$, partial eta squared = 0.11), but this change over time is not dependent on gender ($F = 0.89$, $p = 0.35$). A plot of the estimated marginal means of opposite-sex peer relations can be seen in Figure 2.

## Discussion

The purpose of this study was to examine the effects of participating in a summer program on the social self-concepts of gifted adolescents. Specifically, this study explored the changes in same-sex peer relations and opposite-sex peer relations of gifted students after participating in a 3-week, residential summer program. Results from this study indicate both males and females experienced a significant increase in their perceived same-sex peer relations over the course of the summer program, while males experienced an even greater gain than females. Further, both males and females experienced a significant increase in their perceived opposite-sex peer relations over the course of the summer program. Although the effect sizes were very small, the findings were nonetheless statistically significant. Given the short time frame for measuring students' self-concepts, though, a large effect size would be unlikely, as would a large change in self-concept because of the limited range of the SDQ-II (Olszewski et al., 1987).

These findings are consistent with previous research that indicates gifted students experience an increase in their social self-concepts when they participate in a summer program (e.g., Brookby, 2004; Olszewski et al., 1987). This increase could occur for several reasons. For example, the residential aspect of the current summer program puts adolescents in a situation where they interact with their peers both during and outside of class. The students must

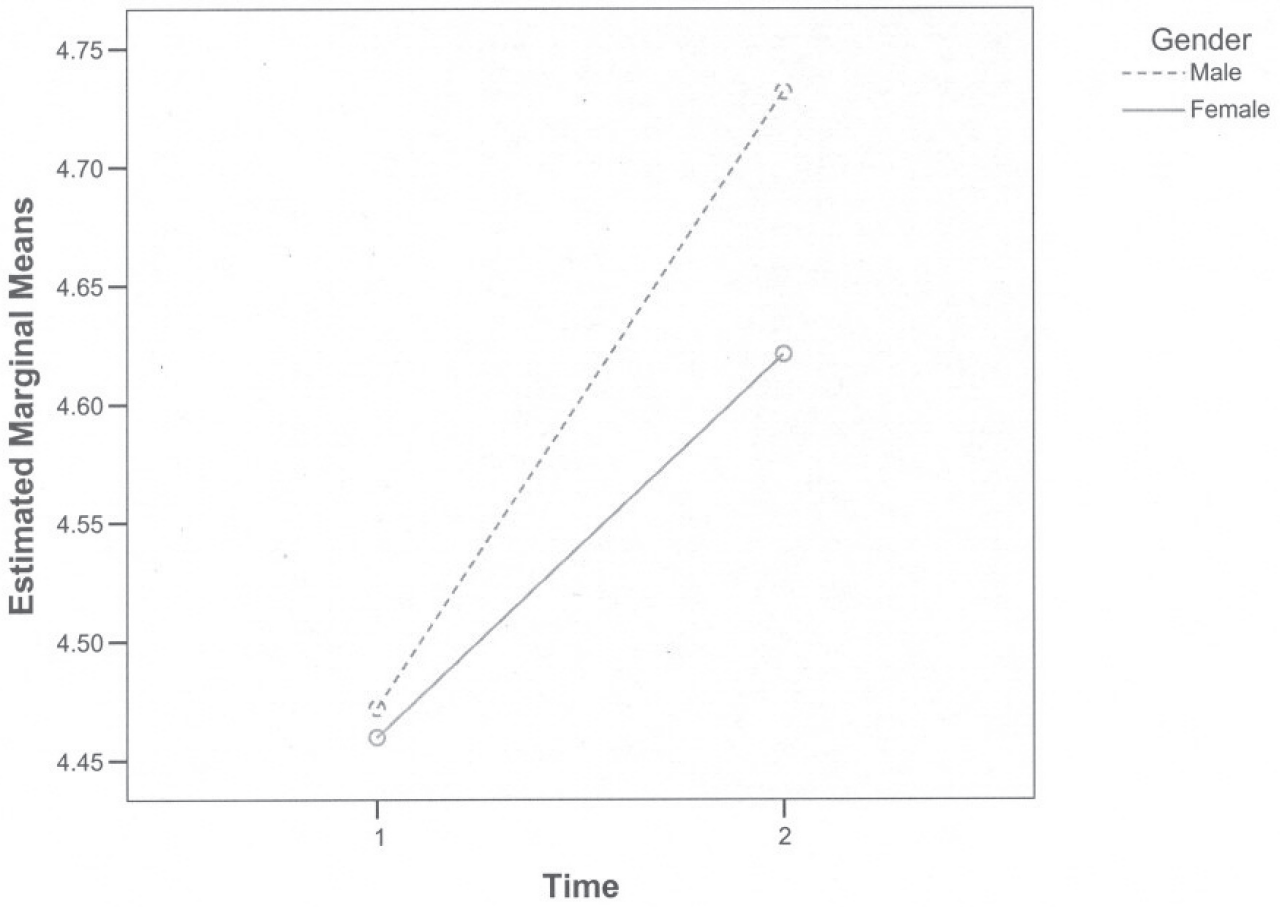


Figure 2. Estimated marginal means of opposite-sex relationships across time for males and females

adapt quickly if they do not know anyone else in the program, but because students spend so much time together, this adaptation appears fairly easy for most students, based on previous findings and the findings from this study. Thus, the "group identity" formed through a residential program likely leads to an increase in self-concept (Kolloff & Moore, 1989, p. 274). Also, developmentally, adolescents focus increasingly on their peers for support, rather than on interactions with parents or other adults (Meece, 2002). Being around like-minded peers is an advantage for gifted adolescents because they are naturally beginning to explore the importance of relationships with their peers rather than with their parents. Again, the increased interaction with like-minded peers may lead to an increase in social self-concept.

Within the current study, males experienced an even greater gain in their perceived same-sex peer relations than females. This finding is inconsistent with previous research that suggests gifted adolescents may experience a significant decrease in same-sex peer relations upon entering a residential program for the gifted (Manor-Bullock, 1994) and research that suggests females usually have higher social self-concepts than males (e.g., Worrell et al., 1998). Within this particular summer program, though, the gifted males appear to have greatly benefited from the opportunity to form bonds with other like-minded males.

## Policy Implications

The findings from the current study have implications for educators and directors of summer programs for the gifted. As social activities are not necessarily the top priority in academic summer programs, directors may be interested in knowing that students are still benefiting on a social level from participating in an academic program. Dixon (1998) explains that, "one way to encourage positive self-concept in gifted adolescents is to establish a community that meets their needs. If one feels good about the academic environment, then possibly one can grow socially and establish a comfort zone" (p. 90). Being around like-minded peers, having the opportunity to express oneself,

and engaging in academically stimulating course material may provide gifted students with a comfortable atmosphere from which to grow.

As mentioned previously, summer programs and extracurricular gifted programs are becoming increasingly popular due to the continued decline in funding for gifted programs within public schools (Gallagher, 2004; Purcell, 1993; Spielhagen & Cooper, 2005). Just as acceleration is one viable alternative for many gifted students that has attained national prominence (Colangelo, Assouline, & Gross, 2004), other opportunities for gifted students, including opportunities for students who have been identified through a talent search, should be made more visible. By increasing the attention paid to such out-of-school opportunities and programs, policy-makers have the unique opportunity to highlight the positive aspects of such programs. Academic summer programs, in particular, may be effective for both the academic and social development of gifted adolescents and should be emphasized at local, state, and national levels.

If gifted students are benefiting both academically and socially from participating in a summer program, as this research and prior research seems to indicate, it is imperative that gifted students be given the opportunity to participate in such programs. Some students may not benefit from summer programs, certainly, but those students who do participate seem to experience noteworthy gains. As the following suggestions are likely already in place at various summer programs, these suggestions may serve as a reminder. First, educators and directors of summer programs could focus on recruiting gifted students, and especially underrepresented gifted students, as many gifted students and their families may not be familiar with summer programs, particularly if they live in rural areas. Second, financial assistance should be offered to students coming from families in need, as many residential summer programs are quite costly. Most importantly, with regards to recruitment and financial aid, gifted students should at least be given the opportunity to participate in summer programs. Finally, the potential effectiveness and benefits of summer programs should be emphasized to educators, parents, and gifted students, each of whom may be concerned with the difficulty of summer program coursework, homesickness, the ability to develop friendships, and other worries related to participating in a summer program. Alleviating such concerns may allow gifted students the opportunity to flourish in a summer program setting.

## Limitations and Directions for Future Research

Because the sample used in this study was drawn from a single summer program, replication of this study across varying types of summer programs is necessary before one can generalize from this research. A comparison group of gifted students who do not participate in summer programs would also be useful when making claims regarding the effectiveness of summer programs, as the comparison group may or may not experience a similar change in self-concept. In addition, the following suggestions for future research might further the current findings.

The peer relationships and perceptions of peer relationships among gay, lesbian, bisexual, and transgender (GLBT) gifted adolescents may be quite different from those of heterosexual gifted adolescents. Adolescence is often a difficult period for GLBT students, and this difficulty may be exacerbated by being gifted (Peterson & Rischar, 2000). Research that examines both the sexual orientation and social self-concepts of gifted adolescents would thus be beneficial to better understand the social experiences of gifted adolescents.

Future research should examine the social self-concept trajectory of gifted adolescents by including more time points in the analyses. For example, measuring social self-concept prior to the start of the summer program would provide baseline data from which to compare students' experiences on the first day of the summer program. Further, measuring social self-concept several weeks or months after the summer program ends would allow researchers to understand the long-term impact of a summer program. Gathering data longitudinally, such as over a course of 4 or 5 years, would provide even further insight into the effects of a summer program on the social self-concepts of gifted adolescents.

As most theories in the field of gifted education revolve around the academic experiences of gifted students, as mentioned previously, a synthesis of research regarding the social experiences of gifted students is definitely needed. A comprehensive evaluation of social self-concept, friendship formation, attitudes, social acceptance, social comparison, and other social constructs would allow researchers to begin to formulate theories regarding the social realm of gifted students' lives. From there, researchers could begin to merge the available literature regarding both academic and social experiences in order to more readily understand the lives of gifted students. Educators, parents, researchers, policy-makers, and gifted students themselves might benefit from such knowledge.

## References


Ablard, K. E. (1997). Self-perceptions and needs as a function of type of academic ability and gender. *Roeper Review, 20*, 110–115.

Bain, S. K., & Bell, S. M. (2004). Social self-concept, social attributions, and peer relationships in fourth, fifth, and sixth graders who are gifted compared to high achievers. *Gifted Child Quarterly, 48*, 167–178.

Brody, L. E., & Benbow, C. P. (1986). Social and emotional adjustment of adolescents extremely talented in verbal or mathematical reasoning. *Journal of Youth and Adolescence, 15*, 1–18.

Brookby, S. A. (2004). Academic self-efficacy and social self-concept of mathematically gifted high school students in a summer residential program (Doctoral dissertation, University of Missouri, Kansas City, 2004). *Dissertation Abstracts International, 65*, 1707.

Byrne, B. M., & Shavelson, R. J. (1996). On the structure of social self-concept for pre-, early, and late adolescents: A test of the Shavelson, Hubner, and Stanton (1976) model. *Journal of Personality and Social Psychology, 70*, 599–613.

Colangelo, N., Assouline, S. G., & Gross, M. U. M. (2004). *A nation deceived: How schools hold back America's brightest students* (Vol. 1). Iowa City, IA: The Connie Belin & Jacqueline N. Blank International Center for Gifted Education and Talent Development.

Colangelo, N., Kelly, K. R., & Schrepfer, R. M. (1987). A comparison of gifted, general, and special learning needs students on academic and social self-concept. *Journal of Counseling and Development, 66*, 73–77.

Coleman, L. J., & Cross, T. L. (1988). Is being gifted a social handicap? *Journal for the Education of the Gifted, 11*, 41–56.

Cornell, D. G. (1990). High ability students who are unpopular with their peers. *Gifted Child Quarterly, 34*, 155–160.

Dixon, F. A. (1998). Social and academic self-concepts of gifted adolescents. *Journal for the Education of the Gifted, 22*, 80–94.

Enerson, D. L. (1993). Summer residential programs: Academics and beyond. *Gifted Child Quarterly, 37*, 169–176.

Erikson, E. H. (1963). *Childhood and society.* New York: Norton.

Gallagher, J. (2004). No Child Left Behind and gifted education. *Roeper Review, 26*, 121–123.

Gilman, R., Laughlin, J. E., & Huebner, E. S. (1999). Validation of the Self-Description Questionnaire-II with an American sample. *School Psychology International, 20*, 300–307.

Hoge, R. D., & Renzulli, J. S. (1993). Exploring the link between giftedness and self-concept. *Review of Educational Research, 63*, 449–465.

Humes, C. W., II, & Campbell, R. D. (1980). Gifted students: A 15-year longitudinal study. *Gifted Child Quarterly, 24*, 129–131.

Kelly, K. R., & Colangelo, N. (1984). Academic and social self-concepts of gifted, general, and special students. *Exceptional Children, 50*, 551–554.

Kelly, K. R., & Jordan, L. K. (1990). Effects of academic achievement and gender on academic and social self-concept: A replication study. *Journal of Counseling and Development, 69*, 173–177.

Kolloff, P. B., & Moore, A. D. (1989). Effects of summer programs on the self-concepts of gifted children. *Journal for the Education of the Gifted, 12*, 268–276.

Lenz, K., & Burruss, J. D. (1994). Meeting affective needs through summer academic experiences. *Roeper Review, 17*, 51.

Leroux, J. A. (1988). Voices from the classroom: Academic and social self-concepts of gifted adolescents. *Journal for the Education of the Gifted, 11*, 3–18.

Manor-Bullock, R. (1994). Gifted adolescents: Social comparisons and changes in self-concept on entering a rigorous academic program in a residential environment (Doctoral dissertation, Ball State University, 1994). *Dissertation Abstracts International, 55,* 3638.

Marsh, H. W. (1986). Verbal and math self-concepts: An internal/external frame of reference model. *American Educational Research Journal, 23*, 129–149.

Marsh, H. W. (1990). *Self-Description Questionnaire (SDQ) II: Manual.* New South Wales, Australia: University of Western Sydney.

Marsh, H. W., & Hau, K. T. (2003). Big-fish-little-pond effect on academic self-concept: A cross-cultural (26-country) test of the negative effects of academically selective schools. *American Psychologist, 58*, 364–376.

Marsh, H. W., Kong, C., & Hau, K. (2000). Longitudinal multilevel models of the big-fish-little-pond effect on academic self-concept: Counterbalancing contrast and reflected-glory effects in Hong Kong schools. *Journal of Personality and Social Psychology, 78*, 337–349.

Marsh, H. W., & O'Neill, R. (1984). Self-Description Questionnaire III: The construct validity of multidimensional self-concept ratings by late-adolescents. *Journal of Educational Measurement, 21*, 153–174.

Marsh, H. W., & Parker, J. W. (1984). Determinants of student self-concept: Is it better to be a relatively large fish in a small pond even if you don't learn to swim as

well? *Journal of Personality and Social Psychology, 47*, 213–231.

Marsh, H. W., & Shavelson, R. (1985). Self-concept: Its multifaceted, hierarchical structure. *Educational Psychologist, 20*, 107–123.

Mayseless, O. (1993). Gifted adolescents and intimacy in close same-sex friendships. *Journal of Youth and Adolescence, 22*, 135–146.

Meece, J. L. (2002). *Child and adolescent development for educators* (2nd ed.). Boston: McGraw-Hill.

Moon, S. M., Feldhusen, J. F., & Dillon, D. R. (1994). Long-term effects of an enrichment program based on the Purdue Three-Stage Model. *Gifted Child Quarterly, 38*, 38–48.

Norman, A. D., Ramsay, S. G., Roberts, J. L., & Martray, C. R. (2000). Effect of social setting, self-concept, and relative age on the social status of moderately and highly gifted students. *Roeper Review, 23*, 34–39.

Olszewski, P., Kulieke, M. J., & Willis, G. B. (1987). Changes in the self-perceptions of gifted students who participate in rigorous academic programs. *Journal for the Education of the Gifted, 10*, 287–303.

Olszewski-Kubilius, P. (2003). Special summer and Saturday programs for gifted students. In N. Colangelo & G. A. Davis (Eds.), *Handbook of gifted education* (3rd ed., pp. 219–228). Boston: Allyn & Bacon.

Parker, J. P. (1998). The Torrance creative scholars program. *Roeper Review, 21*, 32–35.

Paul, K. M., & Plucker, J. A. (2004). Two steps forward, one step back: Effect size reporting in gifted education research from 1995–2000. *Roeper Review, 26*, 68–72.

Peterson, J. S., & Rischar, H. (2000). Gifted and gay: A study of the adolescent experience. *Gifted Child Quarterly, 44*, 231–244.

Plucker, J. A. (1997). Debunking the myth of the "highly significant" result: Effect sizes in gifted education research. *Roeper Review, 20*, 122–126.

Plucker, J. A., Taylor, J. W., V, Callahan, C. M., & Tomchin, E. M. (1997). Mirror, mirror, on the wall: Reliability and validity evidence for the Self-Description Questionnaire II with gifted students. *Educational and Psychological Measurement, 57*, 704–713.

Plucker, J. A., & Stocking, V. B. (2001). Looking outside and inside: Self-concept development of gifted adolescents. *Exceptional Children, 67*, 535–548.

Purcell, J. H. (1993). The effects of the elimination of gifted and talented programs on participating students and their parents. *Gifted Child Quarterly, 37*, 177–187.

Pyryt, M. C., & Mendaglio, S. (1994). The multidimensional self-concept: A comparison of gifted and average-ability adolescents. *Journal for the Education of the Gifted, 17*, 299–305.

Rinn, A. N. (2005). Trends among honors college students: An analysis by year in school. *Journal of Secondary Gifted Education, 16*, 157–167.

Ross, A., & Parker, M. (1980). Academic and social self-concepts of the academically gifted. *Exceptional Children, 47*(1), 6–10.

Shavelson, R. J., Hubner, J. J., & Stanton, G. C. (1976). Validation of construct interpretations. *Review of Educational Research, 46*, 407–441.

Spielhagen, F. R., & Cooper, B. S. (2005, April 13). The unkindest cut. *Education Week,* pp. 47–48.

Stocking, V. B., Porter, L. C., Goldstein, D., & Oppler, S. H. (1993, April). *The self-concept of talented adolescents in an intensive summer program: Implications for programming*. Paper presented at the annual meeting of the American Educational Research Association, Atlanta, GA.

Thomas, T. A. (1989). *Acceleration for the academically talented: A follow-up of the academic talent search class of 1984*. (ERIC Document Reproduction Service No. ED307303)

Tymms, P. (2001). A test of the big fish in a little pond hypothesis: An investigation into the feelings of seven-year-old pupils in school. *School Effectiveness and School Improvement, 12*, 161–181.

Vaughn, V. L., Feldhusen, J. F., & Asher, J. W. (1991). Meta-analyses and review of research on pull-out programs in gifted education. *Gifted Child Quarterly, 35*, 92–98.

Worrell, F. C., Roth, D. A., & Gabelko, N. H. (1998). Age and gender differences in the self-concepts of academically talented students. *Journal of Secondary Gifted Education, 9*, 157–162.

Wright, P. B., & Leroux, J. A. (1997). The self-concept of gifted adolescents in a congregated program. *Gifted Child Quarterly, 41*, 83–94.

## Author Note

The author greatly appreciates the cooperation and support of Dr. Julia Link Roberts, Center for Gifted Studies, Western Kentucky University. The author also wishes to thank Dr. Jonathan Plucker, Dr. Michael Matthews, and three anonymous reviewers for their comments and suggestions in revising this manuscript.

Research for this article was supported by a Faculty Scholarship administered by Western Kentucky University.

Correspondence concerning this article should be addressed to Anne N. Rinn, Department of Psychology, Western Kentucky University, 1906 College Heights Blvd. #21030, Bowling Green, KY 42101-1030. E-mail: Anne.Rinn@wku.edu

## End Notes

[1] Marsh (1990) uses item pairs in factor analysis, such that the 8 or 10 items from each subscale of the SDQ-II are divided into four or five item pairs. For more information, see Marsh and O'Neill (1984).

[2] Because participants provided either SAT subscale scores (verbal and mathematics) or ACT subscale scores (verbal, mathematics, and science), or both, the scores had to be converted to a common scale for analysis. Thus, the ACT subscale scores were transformed into z-scores, which were then transformed into equivalent SAT subscale scores. For those participants providing both their SAT and ACT subscale scores ($N = 2$), only the SAT subscale scores were used. The verbal and mathematics subscale scores were then combined to create one indicator of ability, which is the equivalent of a composite SAT score.