Elementary Talented and Gifted Students' Perceptions and Achievement in Cluster and Pull-out Classes

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ABSTRACT

Talented and gifted students require educational modifications to realize their full potential. Educators must design the best possible education for talented and gifted students with the most appropriate environment. A modified curriculum which addresses the differences in the talented and gifted (TAG) student needs to be developed and implemented to provide the best education possible.

The purpose of this mixed methods study was to examine the perceptions, attitudes, and beliefs of gifted students in addition to their achievement and the program model (pull-out versus cluster) at the elementary level. Quantitative data was obtained from the *Harter Self-Perception Profile for Children* (Harter, 2012) and the Georgia Criterion Reference Competency Test. This study used qualitative pieces of interviews and focus groups to tie the quantitative and qualitative strands together.

The findings from this study were numerous. The interviews' over-arching themes were: a) TAG students enjoy working together; b) they enjoy challenging projects and see them as fun; and c) they do not like being singled out. The over-arching themes from the focus groups were: a) TAG students preferred to work in small groups; b) they liked learning together; c) liked having challenging activities; and d) when pulled out for resource they did not like missing classwork. There were statistically significant interactions between all the subscales of the *Harter Self-Perception Profile for Children* and the cluster and pull-out groups. Grouping had a statistically significant effect on the perception scores of particular grade levels and subscales. Data for the content areas showed differences for the two grouping options.

The indications from this study led the researcher to see there is a relationship between academic achievement and perception. In this study the pull-out group had higher perception scores and higher achievement scores compared to the cluster group. However, one must remember that a TAG student is not necessarily gifted in all areas and it is difficult at best to generalize that all students in pull-out models would have higher achievement scores than TAG students in cluster models.

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Chapter I

INTRODUCTION

Talented and gifted students require educational modifications to realize their full potential. To do that, educators must design the best possible education for talented and gifted students with the most appropriate environment. Borland (1989) emphasized that the curriculum needed to be modified to provide that environment and that perhaps spending all day without differentiation in the regular classroom is not the best setting for the talented and gifted learner. The Marland Report (Report to the Congress of the United States, 1972) stated that there were many areas of giftedness. Who are the talented and gifted children? Borland (1989) defined these students as those who excelled the average student in academics or potential and whose instructional needs were beyond or exceeded the regular curriculum. He believed our most intelligent students needed to be stimulated and fostered to reach their full potential.

One could ask why the talented and gifted need a differentiated curriculum. The curriculum for the average student does not address the talented and gifted student's ability "to think, to learn, and to produce information" (Borland, 1989, p. 173). Thus, a modified curriculum which addresses the differences in the talented and gifted (TAG) student needs to be developed and implemented to provide the best education possible. McGrail (2005) stated that most educators do not know how to differentiate instruction for the gifted student and that those students who had been served in part-time pull-out programs in the past were not having their educational needs met. Winebrenner and

Brulles (2008) explained differentiation, as when the teacher changed her strategies and methods of instruction to accommodate how a student learned. Knowing whether or not students needed more instruction with kinesthetic, tactile, visual, or auditory methods was important for each student to achieve. Modification of the curriculum needed to happen for the TAG student by extending some standards and providing opportunities to enrich others.

Studying the attitudes and beliefs of all the stakeholders, students, parents, teachers, and even administrators had been important when making decisions on implementation of programs which best served the gifted population (Cross, Cross, & Finch, 2010). Generating discussions about all the stakeholders' perceptions concerning current, in-use programs along with using available research was one of the first steps towards implementation. Since the mid-1980s, educators have been told that ability grouping is not beneficial to some students (Slavin, 1987). The gains in achievement and positive social effects for using ability grouping with the talented and gifted students had been cited by researchers (Kulik, 1993; Rogers, 2002; Shields, 2002; & Tieso, 2003). Kulik (1993) described ability grouping as a practice of using assessments gauging ability or readiness levels to place students in classrooms or with-in classroom groupings for instruction. Elementary students were commonly grouped heterogeneously in their classrooms and homogenously or ability grouped within their classrooms for reading or math instruction (Fiedler, Lange, & Winebrenner, 2002). Ability grouping had also been used synonymously with tracking students based on their poor achievement in the past. However, significant achievement was reported for students who were ability grouped using the definition of grouping students of like abilities on a temporary basis for specific

skills instruction (Fiedler et al., 2002; Tieso, 2003). A student identified as talented and gifted (TAG) spent most of the day assigned to a regular education classroom with a teacher who was not trained in gifted education and had no idea how to differentiate curriculum for the TAG student (Bianco, 2010). When Rogers (2002) wrote her article, *Grouping the Talented and Gifted*, she asserted that the implementation of whole group instruction and cooperative learning groups applied to a heterogeneous class to solve problems in education would lead to the loss of within-class grouping for ability in reading and math and the elimination of programs and resources for the gifted. In support of the teachers of the gifted student she said, "There is little time left over for constructing innovative differentiation for their gifted and talented charges" (Rogers, 2002, p. 104).

Problem to be Studied

The National Association for Gifted Children's (NAGC, 2009) position paper on grouping listed purposes for grouping: 1) differentiation of curriculum for students with similar intellectual abilities; 2) make instruction appropriate; 3) address affective needs; and 4) peer group learning, and all of the above should be taught within the least restrictive environment. The NAGC position paper contained two general categories for grouping; ability grouping and performance grouping. NAGC (2009) defined ability grouping as the grouping of students having similar potential. Ability grouping options included cluster grouping, pull-out grouping for enrichment, full-time ability grouping, and like-ability cooperative groups (Rogers, 2006). Rogers stated there were many variations of these groupings which depended upon the settings in which they were offered. Rogers defined cluster grouping as the grouping of five to eight students

identified as TAG students placed in a heterogeneous classroom with a gifted trained education teacher who provided instruction with a compacted curriculum, faster pace, and less drill than the regular students in the classroom. All subject areas were differentiated for the TAG students. When pull-out grouping was implemented, TAG students were removed from a heterogeneous classroom to a gifted resource teacher for lessons on general intellectual skills. Like-ability cooperative grouping involved a teacher grouping students within a regular classroom or a pull-out resource room for particular tasks or projects. Typically, the tasks or projects employed a longer time period than for the students of average ability. The evaluation criteria reflected the standards extending beyond the grade level requirements. Full-time ability grouping used scores from aptitude tests and created a self-contained, homogeneous classroom of high scoring students. These students remained together throughout the school day for instruction. In some school settings this classroom remained together throughout their school years. The teacher differentiated each content area within the classroom using appropriate pacing, compacting of the curriculum, and different learning styles geared for TAG students.

Performance grouping as defined by NAGC (2009) stated students are assigned to classrooms or groups as a result of having a similar performance or achievement. Rogers (2006) listed six options for performance grouping: regrouping for specific instruction, cluster grouping, within-class/flexible grouping, like-performing cooperative learning, cross-grade/multi-age grouping, and resource room pull-out enrichment clusters. As stated previously, Rogers cautioned that deviations of these groupings were dependent on what a school offered. Generally, these groupings were defined as follows: cluster grouping was the placement of from five to eight TAG students grouped in self-

contained, heterogeneous classrooms for the entire school day. All subject areas were differentiated for the TAG students by use of concepts presented at a faster pace, compacted lessons, and lessons with less practice and drills.

Rogers (2006) described some cluster groupings which grouped high performing students with TAG students into two groups and the students within these groups moved fluidly between the groups to receive instruction at the highest level or dropped to a lower level when needed. Pull-out enrichment groupings were used for TAG students on more of a short term basis for specific instruction such as students working on a science unit of rocks meeting for a month with a geologist. Like-performing cooperative learning was defined as teachers grouping TAG students for a particular task or project to be worked cooperatively and evaluated on together. Like-performing cooperative learning provided TAG students with the opportunities to learn beyond the standards. For example in a science class the TAG students demonstrated their understanding of physical and chemical changes by designing experiments with provided materials instead of following a set of instructions prescribed by the curriculum. Within elementary school settings, within-class groupings were used for unit lessons and typically students were placed in groups dependent upon their current level of mastery. Within an elementary classroom a teacher could describe groupings as below grade level needing remediation, on grade level, and above grade level. Regrouping for specific instruction was defined as an opportunity for TAG students to be grouped for specific curriculum. For example in elementary schools this option was often seen for reading and mathematics instruction. Students would go to another classroom within their grade level for different instruction in that content area. Similar to regrouping for specific instruction, cross grade/multiage

classrooms were for TAG students who were performing at higher levels. Students were either sent to a higher grade level for specific instruction, for example a first grader might go to a second grade class for reading instruction, or a student was placed in a multiage classroom and allowed to work at an individual pace within several grade level curricula.

Borland (2009) argued that the statistic of 3% to 5% of the population were identified gifted was a misconception based upon the Marland Report's (Report to the Congress of the United States, 1972) definition of giftedness from Intellectual Quotient (IQ) scores. However, Reis and Renzulli (2009) insisted that having a preset idea that giftedness is only defined by high IQ score is an outdated method of identification. There were many students with available resources who could exceed standards because giftedness was cultivated, not permanent. Plucker, Burroughs, and Song (2010) found educators did not expect TAG students would need differentiation in courses to meet their educational needs because they were scoring well on the standards tested on state assessments. However, TAG students needed differentiation to exceed the standards as well as some TAG students who needed differentiation in courses where they experienced difficulty. In particular, elementary TAG students' motivations and academic achievement were dependent upon their experiences in school (Moon, 2009). Without differentiated curriculum or grouping for ability, frustration, boredom, underachievement, and low self-concept to name a few behaviors were a result attributed to a curriculum aimed at average ability and low-ability students (Moon, 2009). Even within their own family relationships, misconceptions of expectations of behaviors and abilities between parents and students and even feelings of jealousy among siblings existed. Peterson (2009) found that gifted students were as susceptible to social and

emotional problems as any other student. Due to preconceived notions of gifted students' behaviors, counselors, teachers, and parents did not provide for differentiated lessons and approaches which were more appropriate for the TAG students' development. Bianco (2010) agreed with Gates (2010) and added that more emphasis needed to be placed on the differentiation of lessons to best meet the needs of the gifted population. No clear direction for teaching TAG students was apparent with the reporting of the delivery models from the twenty-seven states included in the 2010-2011 *State of the States in Gifted Education* report (NAGC, 2011). The top three programming models were resource room (pull-out or enrichment), regular classroom, and cluster classroom (differentiation). A disparity exists in the three models and because of their prevalence in American education at this time; a need exists to study which model is more appropriate for the TAG elementary student.

Purpose of the Proposed Research Project

Two common ways of providing for TAG students include cluster and pull-out programs. The purpose of this study was to explore the perceptions and achievement of the elementary TAG students' experiences who were enrolled in cluster group versus pull-out classrooms. The NAGC (2009) defined a clustered class as consisting of the top five to eight students in the grade level, placed in a mixed ability classroom. The teacher proportionately differentiates the curriculum each day. In this study a cluster classroom is defined as a classroom with five to eight identified TAG students who were served throughout the school day within a heterogeneous grade level classroom by a regular education teacher with gifted certification. For the purposes of this study, a regular education teacher with gifted certification is one whom earned a Bachelor of Science

degree in education and completed requirements from the State Department of Education (Georgia Professional Standards Commission, 2014) to receive the gifted endorsement. NAGC defines a pull-out program as one in which the TAG student is served for one segment each day by a resource gifted certified teacher outside the regular classroom. In this study a resource teacher is one whom had a gifted endorsement, as defined by the Professional Standards Commission, and only taught TAG students on a daily or weekly basis. Generally, the only difference between the regular education teacher with gifted certification and the resource gifted teacher was that the resource gifted teacher taught gifted classes throughout the day for the entire school. The regular education teacher with gifted certification taught a cluster classroom with a group of TAG students. The resource gifted teacher pulled-out the TAG students periodically or served as a resource for the teacher. Part-time ability grouping included pull-out/send-out/ withdrawal/ resource room enrichment groups. Students left a regular education classroom for a period of time each day or weekly to receive differentiated lessons.

Few recent studies have considered the effects of pull-out or clustering programs for TAG students throughout the day within the regular classroom for the different academic courses. What are the students' perceptions of having other gifted students in their classroom all day long? What are their experiences and perceptions of leaving their classrooms each day to go to a different teacher?

Cross et al. stated:

> Like all students, gifted students need an appropriate education. The dilemma for supporters of gifted education is how to advocate for the unique needs of children

with gifts and talents without alienating the much larger population that does not have similar abilities. (Cross et al., 2010, p. 246)

The findings from this study contributed to the overall knowledge base on grouping. The findings enabled systems and school administrators to make informed decisions when creating programs for elementary TAG students, assigning trained gifted teachers to regular classrooms for clustering, providing resource support for the gifted teacher, budgeting money, and ultimately providing the best and most challenging education possible for the students.

Conceptual Framework

The conceptualization of this study was derived from the search for the best education for gifted students. Borland (2013) suggested that educators need to determine what to teach and how to accomplish instruction to provide the best education possible. Cross et al. (2010) said, "As research in the field of gifted education has evolved, the truly different needs of students with gifts and talents have become more apparent" (Cross et al., p. 236).

Teaching gifted students, observing different types of program models for teaching gifted students, and a review of the literature has led to the questions of whether a difference existed in the achievement of students taught with the cluster or pull-out model and what the perceptions of the students' were in those models. During the researcher's experiences as an elementary teacher the TAG students in each grade had been divided among the regular classroom teachers and served in pull-out programs. Those TAG students seemed to be reluctant to leave the classroom for fear of missing something, to be used as a tutor, to be the teacher's helper, to be ostracized for asking too

many questions, to have no other students in their classroom on the same intellectual plane, or to be held at standards much lower than their abilities. Conversely, teachers differentiated instruction for the TAG student in all subjects in their classrooms and yet still were not able to provide the TAG student opportunities to work with their intellectual peers on a regular basis. Programs like the Governor's Honors Program at the local university, Duke University Talent Identification Program (TIP), although for high school students, offered a potential for elementary students to work with others of the same ability all day and was worthy of further study. Thus began a study about cluster grouping in elementary classrooms. Gathering all the available research available at the time, the researcher's administrators were willing to try clustering. As relevant literature on gifted students' educational programming was studied and field observations of students taught were analyzed, several questions were formalized. How do gifted students feel about the different types of programming in which they are enrolled? What are some of the effects a gifted student has with the different programming exposure? A desire to investigate perceptions and achievement of the students was conceptualized. A number of years teaching a cluster class had enabled the researcher to see benefits to both the TAG students and the other students enrolled in the class. Growth was made each year for all the students, regardless of their academic abilities. The perceptions of the TAG students concerning whether they were in a cluster classrooms or a pull-out classroom was unknown. A mixed methods study explored and interpreted the perceptions and achievement of the elementary TAG students in cluster and pull-out options and an exploration of any possible relationships between perceptions and achievement.

Theoretical Framework

Sternberg and Davidson (2005) claimed most gifted education programs were based on the use of readily assessable measures of intelligence, creativity, and motivation rather than on a particular theory. They asked for better theories to guide the instruction of talented and gifted students. Grant and Piechowski (1999) reported theories in the social sciences contained three roles in addition to serving as explanations of the theory. Depiction (formal lens), application (means to use the theory), and statement of values (worthy and unworthy ideas) were the three components they listed in theories. They also said many of the talented and gifted models and theories addressed the identification of the students' giftedness but not the experiences or perceptions of the students.

Gaining understanding from the student's point of view enabled educators to develop the appropriate educational environment for the talented and gifted student (Ormrod, 2008). Lev Vygotsky's theory proposed that to achieve full cognitive development a person must have social interaction is one aspect of his theory of intelligence and development. Vygotsky, a leader in the constructivist perspective provided the basis for the sociocultural theory. Ormrod (2008) wrote that Vygotsky's dialectical approach of knowledge came from the interaction between the student, the environment, and other individuals' interactions with the student. Learning occurred when the student received help from more competent people. Characteristics of a constructivist-based learning environment and teaching models and environments for a constructivist setting are shown in Table 1.

Table 1

Constructivist-based Learning Environments, Teaching Models, and Teaching Environments

Learning Environment	Teaching Models and Environments
1. Opportunities to manipulate and experiment	1. Generative topic selection
2. Problems that link concepts to everyday experiences	2. Explicit and public goals
3. Higher order concepts and multiple perspectives	3. Ongoing assessment
4. Evaluate, test, and revise knowledge	4. Learner centered
5. Connect cognition to context	5. Authentic tasks
6. Emphasize the value of overcoming flawed beliefs as the basis for understanding	6. Active participation
	7. Explorations from multiple perspectives
	8. Rich social context
	9. Supportive relationships
	10. Life-long learning

Note. Information is compiled from Ormrod (2008).

The zone of proximal development (ZPD) is another aspect of Vygotsky's theory as seen in Figure 1. He defined this zone or range as the difference between what a child can do alone and what the student could do in collaboration with adults or peers who have more skill (Reutzel & Cooter, 2004; Roe, Smith, & Burns, 2005; Slegers, 1996). Once a ZPD is established for a child, the child can be presented with tasks and taught different strategies to successfully accomplish the task. The interaction between the child and the teacher helps the child experience success. As children become more successful in their ZPD, the teacher begins to offer less support and the children take on more responsibility for their learning (Roe et al., 2005; Tuckman & Monetti, 2011).

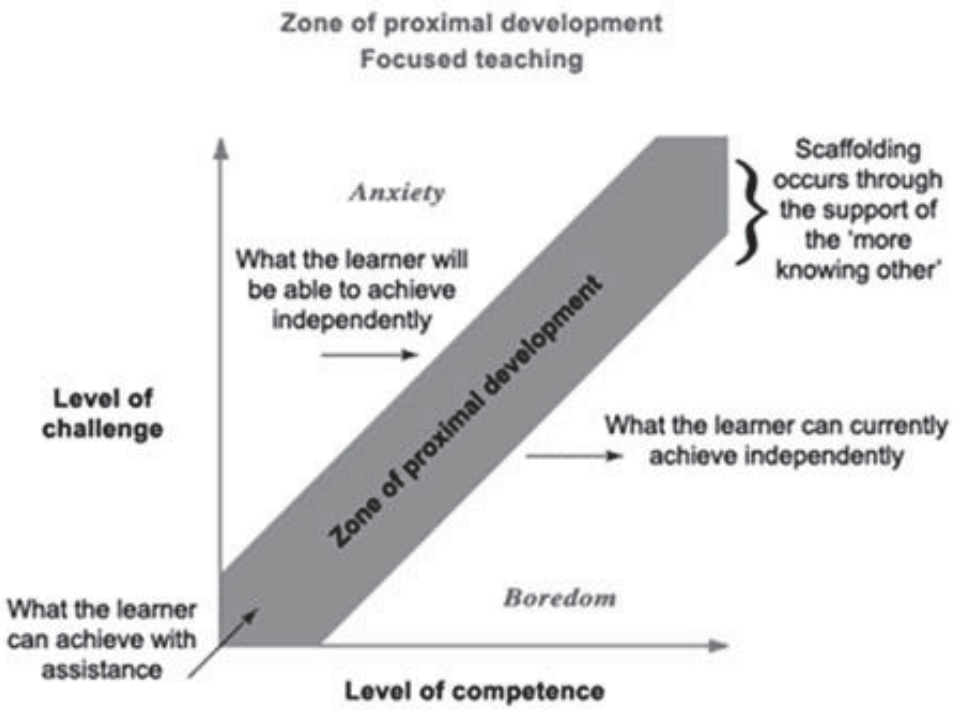

Figure 1. Zone of Proximal Development (ZPD) with range of independent learning, areas requiring assistance from teacher, and scaffolding. Included are where concepts are too easy or too hard. Retrieved from http://www.education.vic.gov.au/school/teachers/teachingresources/discipline/english/proflearn/pages/velszopds56.aspx Department of Education and Training, Victoria (2013), adapted from Hill & Crevola (unpublished).

The theoretical framework of this study was based upon Vygotsky's Social Development Theory and ZPD. Vygotsky believed that for the learner's cognitive ability to develop, social interaction was critical for the learner to have. As shown in Figure 1, some skills can be performed by the learner independently. Other skills require the learner to have assistance. The skills requiring help are said to be in the ZPD. The ZPD is the theoretical basis for scaffolding the learner (Tuckman & Monetti, 2011). The belief that all students were better served if they were heterogeneously grouped is mistaken (Winebrenner & Devlin, 2001). Gifted programs had been eliminated based on research that appeared to show no benefit for ability grouped students (Winebrenner & Devlin,

2001). Cooperative learning issues and grouping have been more damaging to gifted education because more than gifted students losing the opportunities to learn with their intellectual peers, teachers were not focusing on the gifted learners' curricular or instructional needs (Rogers, 2002). Educators, schools, and districts often included in their mission and vision statements that they believed in providing the best education possible for each child. Where gifted programs have been cut or eliminated and those students were not being served in any capacity, the students were not provided the best possible education as they sat bored in their classrooms. When students were bored, the risks increased for a lack of motivation, academic problems, underachievement, and loss of interest (Swaitek, 2001; VanTassel-Baska, 2003).

TAG students would benefit and be best served if educators were able to discover the TAG students' perceptions concerning their classroom groupings and program models. The two most common program models include pull-out and cluster (NAGC, 2011). Determining whether a difference in achievement existed and learning what student perceptions were between the two models would aid educators in planning and providing the ideal setting for the student.

Research Questions

1) Were there significant differences in the global self-worth (GSW) perception or the sub-scales of self-concept perception (SC = Scholastic Competence; SoCo = Social Competence; AC = Athletic Competence; PA = Physical Appearance; and BC = Behavioral Conduct) of gifted elementary students in cluster versus pull-out classrooms as measured using the *Harter Self-Perception Profile for Children*?

2) Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using an on-line structured interview with open-ended questions? (Appendix A)

3) Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using focus groups formed from six students at each grade level? (Appendix B)

4) Were there significant differences in achievement levels of gifted elementary students in pull-out versus cluster using the Criterion Referenced Competency Tests (CRCT) total scores in reading, language arts, mathematics, science, and social studies content areas?

Definitions

Ability-grouping: Students are assigned to a class or group based on an ability or achievement assessment (Kulik, 1993; NAGC, 2009; Slavin, 1987)

Athletic Competence: one of the subscales on the *Harter Self-Perception Profile for Children*; refers to the student's perception of how they perform at sports or outdoor games (Harter, 2012).

Behavioral Conduct: one of the subscales on the *Harter Self-Perception Profile for Children*; refers to the way one behaves, knowing how to behave and how to avoid getting into trouble (Harter, 2012).

Cluster Grouping: A small number of TAG students placed with one teacher at a grade level and a proportionate amount of that teacher's class time is spent in direct differentiation for the group. The remainder of the class is a normal mix of ability levels Researchers have differing numbers for placing TAG students in classrooms, however the

range is between three to ten TAG students per classroom (Fiedler et al., 2002; Gentry & Fugate, 2013; McGrail, 2005; NAGC, 2009; Rogers, 2006; Schuler, 1997; Winebrenner & Devlin, 2001). The NAGC (2009) defined a clustered class as consisting of the top five to eight students in the grade level, placed in a mixed ability classroom. The teacher proportionately differentiates the curriculum each day. In this study a cluster classroom will be defined as a classroom with five to eight identified TAG students who are served throughout the school day within a heterogeneous grade level classroom by a certified teacher with gifted certification.

Criterion Reference Competency Test. (*CRCT):* The CRCT is designed to measure how well students acquire the skills and knowledge described in the state mandated content standards in reading, English/language arts, mathematics, science and social studies (Georgia Department of Education, 2013).

Differentiated Curriculum: Adaptation of the curriculum in all of the content areas in order to provide appropriate levels of instruction for the TAG student. Curriculum is differentiated by level of depth, complexity, challenge, creativity, abstractness, and acceleration (VanTassel-Baska & Stambaugh, 2006).

Global Self-Worth: The perception of how one sees himself generally without specific references to specific domains (Harter, 2012).

Harter Self-Perception Profile for Children: multidimensional measure used to assess self-evaluations of children ages 8-15 across multiple domains (Harter, 2012).

Physical Appearance: one of the subscales on the *Harter Self-Perception Profile for Children*: refers to if one feels they are good looking and how one feels about his or her appearance (Harter, 2012).

Pull-out: TAG students at a grade level are sent out for training in critical skills or creative skills or extensions of regular subjects. Focus would be in one area only (Rogers, 2006). NAGC (2009) defines a pull-out program as one in which the TAG student is served for one segment each day by a certified teacher with gifted certification outside the regular classroom.

Resource Teacher in Cluster Program: A resource teacher in a cluster program is a certified teacher holding a gifted endorsement/certification (Georgia Professional Standards Commission, 2014), who serves the TAG students in enrichment of content areas, supplements the content areas, or uses a curriculum which enhances or enriches the regular curriculum. Resources teachers serve students in multiple ways, including one segment a day, once a week for a few segments, or all day once a week. In this study the resource teacher served the TAG students once a week for an entire day using projects which integrated the content areas.

Resource Teacher in Pull-out Program: A resource teacher is a certified teacher in education holding a certificate/endorsement certification (Georgia Professional Standards Commission, 2014), in gifted education and serves the TAG students for one segment a day in a specific content area.

Scholastic Competence: one of the subscales on the *Harter Self-Perception Profile for Children*; refers to the student's perception of how they do in school in reference to his or her schoolwork (Harter, 2012).

Self-Concept: This study herein refers to the self-concept as the combination of the subscales from the *Harter Self-Perception Profile for Children*: Social Competence,

Scholastic Competence, Athletic Competence, Physical Appearance, and Behavioral Conduct (Harter, 2012).

Social Competence: one of the subscales on the *Harter Self-Perception Profile for Children*; refers to the student's perception of how to be a friend, how to get others to like him or her (Harter, 2012).

Talented and Gifted: a gifted education student is defined as one who demonstrates a high degree of intellectual and/or creative ability (ies), exhibits an exceptionally high degree of motivation, and/or excels in specific academic fields, and who needs special instruction and/or special ancillary services to achieve at levels commensurate with his or her ability (ies) (Georgia Department of Education, 2013). There are two options which a student may meet for qualification in the Talented and Gifted Program. Option A requires a student to qualify with a mental ability score and an achievement score within the following:

1. Score 99th percentile composite score on a nationally age normed mental ability test (Grades K-2) OR Score 96th percentile or above composite score on a nationally age normed mental ability test (Grades 3-12).
2. Score 90th percentile or above on Total Reading, Total Math, or Complete Battery on a nationally normed achievement test.
3. Creativity and Motivation evaluation data are required.

To meet the criteria for the state Talented and Gifted program under Option B, students must qualify in three out of four areas:

1. Score 96th age percentile or above on a standardized, nationally normed mental abilities test.

2. Score in the 90th percentile or above in reading, mathematics, or composite score on a standardized, nationally normed achievement test.
3. Score in the 90th percentile or above on a creativity assessment.
4. Score in the 90th or above on a motivational assessment.

Procedures

The first phase of the study consisted of addressing the research question comparing the students' perceptions in cluster and pull-out classrooms using the *Harter Self-Perception Profile for Children.* Proper procedures for consent were obtained using the informed consent (Appendix E). TAG students in grades three through five at two schools in rural school districts located in the southeastern United States were selected as the participants using a convenience sample method. The *Harter Self-Perception Profile for Children* was then administered. Open-ended interview responses were analyzed and coded for themes. As themes emerged, questions were generated from the themes and added to the original questions used for the interviews and focus groups.

Focus groups were conducted after analyzing the open-ended interview results for the second phase. Six students from each grade level at each school were randomly selected for the focus groups from the participant group. Patton (2002) stated that an interview using a focus group can yield quality information because the responses from the focus group are developed within a social context from discussions the group has together. The participants were able to voice their views, hear the others' views, and revise their thinking based on what they heard or shared with the others. The focus group format was chosen after the questions were previously piloted because of the advantages of the participants enjoying the socialization, participants refined their answers and built

upon one another's viewpoints, and quickly seen were disparity of opinions or consistent viewpoints (Patton, 2002). Specific focus group questions were formed after a pilot focus group was convened two years previous to the study using similar questions and participants. Participant responses during that focus group led to the formation of the following questions for this study (see Appendix B):

1. What are your interests and hobbies? Are you able to work with your hobbies and interests at school?
2. Do you like to work alone, in small groups, or with a larger group?
3. What types of projects do you like to work on? Please list some examples.
4. Do you like to create or invent things? Stories? Plays? Music? Poems?
5. What do you think are advantages to being in a cluster?
6. What are the disadvantages?
7. What are good things about being together?
8. What are good things about being the only gifted student in a class?
9. Is there anything else you would like to tell me about your experiences with discovery?

The interviews, also part of the qualitative phase two piece, were conducted on-line. An on-line format was chosen for several reasons. One reason was that the students at this age enjoyed using technology (ie. the computer). Using an on-line format allowed them to use the computer to answer the questions. The second reason is that the on-line open-ended interview provided the opportunity for the students to be completely free to answer the questions without fear that their teacher would see the answers. It also was reassuring to the students that their responses would remain anonymous and they were

able to respond freely. Lastly, by responding to a computer, the factor of trying to please the researcher was removed. Two students were randomly selected from each focus group for in-depth interviews. The approach for the interviews followed Patton's (2002) suggestions for an interview guide. The interview guide allowed the interviewer to adhere to a specified time limit, kept the questions focused, and the questions the same for each interview. The questions and format followed Seidman's (2006) and Patton's (2002) standardized open-ended interview instrumentation. Specifically, the wording and order of the questions were the same for each interview. Questions 1 through 4 were multiple-choice and designed to provide the researcher with descriptive data and verify students' enrollment in either pull-out or cluster class. Questions 5 through 10 were open-ended and respondents were given an essay text box for responses. According to Patton (2002), this format reduced the bias and made analysis of the data easier. The student was contacted directly if there were follow up questions which needed further clarification for understanding. The interview questions and on-line format were piloted with a few TAG students to check for understanding and clarity of the questions and formatting and ease of using the on-line structured open-ended questions (see Appendix A). Some changes were made including changing the word "academic" in question nine to "hard work or challenging tasks." Additionally, the definitions of cluster classroom and pull-out were given throughout the on-line interview so the interviewees did not have to scroll to the beginning of the interview for the definition.

1. I have experienced time in a gifted cluster classroom. (A cluster classroom has 3-10 other gifted students all day long in the same classroom).

2. Since I have been identified gifted, I have received services in a pull-out model. This means I leave my regular classroom and go to the gifted teacher in my school for a class once a day. (A pull-out model usually means there are only one or two gifted students in the class all day.)
3. Since I have been identified gifted, I have been in a cluster grouped class. This means that I am with 3 to 10 other gifted students all day. I may attend or may not attend a resource classroom once a week.
4. There are other gifted students in my homeroom class.
5. Describe your experiences in a pull-out classroom? Describe your typical day.
6. What are the advantages and disadvantages to being the only gifted student in your classroom?
7. What are your experiences in a gifted cluster classroom? Describe your typical day.
8. What are the advantages and disadvantages to being in a cluster classroom with a group of gifted students all day?
9. How do you respond to academic challenges?
10. Do you have any comments or experiences you would like to tell me about?

The third phase was the re-administration of the *Harter Self-Perception Profile for Children* as a posttest. The profile was analyzed for any differences between the first administration and the final administration within the two groups and any differences between the two groups. An ANOVA was used to compare the means of the subscales and *post-hoc* procedures were used to explore for possible differences between the subscales (Field, 2009; Campbell, & Stanley, 1963).

Finally, the last phase was a quantitative piece with the analysis of the CRCT results. CRCT scores for each student participant were obtained from the schools. Scores were obtained from the previous school year (Spring 2013) in addition to the current year (Spring 2014). Scores from the subject areas were analyzed and compared with the *Harter Self-Perception Profile for Children* results for any relationships between perceptions and achievement and class groupings. An ANOVA was used to compare the total scores' means of the content areas of the CRCT for the cluster and pull-out groups for each grade level.

Significance of Study

Little (2012) discussed some of the terms educators of the talented and gifted child have heard students and parents use such as "challenging" and "motivating." What makes a TAG student excel or not excel academically? What is the TAG student's perception of his or her curriculum? The most critical area of concern in gifted education is the necessity for a more challenging curriculum. Most curriculums are designed for the regular learner. The learner's objectives are not intended for the gifted student. When goals are not set high enough for the gifted learner, motivation of the learner becomes a factor (Little, 2012). Cross et al. (2010) conveyed that critical examinations of studies for gifted students were unusual occurrences. However, when designing the most appropriate education for the TAG student, the beliefs and expectations of the students must be examined. When an opportunity for the proper identification or education for those with exceptional talents to be educated was nonexistent, a potential for missed opportunities occurred to the detriment of the community. Identification early in the education of students with potential high ability and fostering those abilities with challenging activities

would also help those students realize their full potentials. This study provided evidence relating to cluster and pull-out programs.

Justification for Study

VanTassel-Baska (2006) advanced apprehensions after discovery of one third of the elementary schools in her study using cluster and inclusion delivery models. As the only means of services for the TAG student the concern was that differentiation of instruction and curriculum was inadequate. Additionally, three-quarters of the elementary schools in the study used the pull-out model. However, the resource teachers and regular classroom teachers did not coordinate or collaborate on the curriculum for the students. Addressing these areas was vital to creating quality and enduring programs. Borland (2013) said as educators, we needed to reevaluate our reasons for teaching the gifted student. Gifted educators should be searching for the models and programs which best address the best possible education for the gifted student. Gifted education does not have to be designed for "…elitist, racist, sexist, or blighted by social-economic inequities" (Borland, 2013, p. 77). However, educators of gifted students could design programs and delivery options which were suitable and provided the best education possible for the TAG student. Development of suitable programs required knowledge of students' perceptions according to Grant and Piechowski, "In order to develop these sorts of theories, we need rich, well-developed accounts of how gifted children think, feel, and experience, and of their self-defined interests and goals" (Grant & Piechowski, 1999, p. 11).

Basic Assumptions

The researcher assumed that the TAG students participating in this study all met the state criteria for admission to the TAG program as defined by the State Department of Education. As regards to the state administered CRCT, the researcher assumed all the participants put forth their maximum effort when completing the assessment. Finally, the researcher assumed the participants were honest when they answered the open-ended interviews and focus group questions.

Basic Limitations

The limitations of this study included the small number (N = 59) of participants and that the participants were enrolled in only two school districts. The limited number of participants affected the external validity of the study due to the population being accessible rather than a target population. Teacher instructional strategies were another limitation to this study. Determining whether TAG students received differentiation within the regular classroom was needed for interpreting the findings of the study. The use of the CRCT as the only evidence of academic achievement was a limitation because the CRCT is a test of basic skills and may not accurately reflect the participants' achievement in all areas. The results of the open-ended interviews and focus group questions depended on the participants being truthful in their answers. Additionally, the researcher was a former teacher of some of the TAG students at one of the schools which was a threat to researcher bias. A threat to internal validity was possible due to experimental mortality. With such a small number of participants, the possibility that some students would drop out or transfer to different schools might affect the results (Campbell & Stanley, 1963; Ohlund & Yu, 2012; Yu & Ohlund, 2012).

Delimitations

The researcher limited the study to third through fifth grade TAG students at two rural southern schools. The teacher was familiar with some of the students. Transferability of the study was reduced because convenience sampling was used.

Summary

Vaughn, Feldhusen, and Asher (1991) reviewed nine pull-out options to determine the effects of the pull-out grouping option upon achievement and self-concept amongst other variables. A positive change for achievement occurred when students participated in pull-out groupings. Gentry and Owen (1999), Gentry and MacDougall (2007), and Brulles and Winebrenner (2011) also reported positive changes in achievement when clustering was used in addition to other grouping practices in a Total School Cluster Grouping. Rogers (2007) found evidence in her synthesis on a variety of grouping options, including clustering and pull-out, that positive effects in achievement occurred when TAG students were grouped. Brulles, Saunders, and Cohn (2010) determined there was higher academic achievement in mathematics for students enrolled in cluster grouped classes as compared to those TAG students in other classes who did not receive special services. Shields (2002) explored the academic achievement, perceptions, attitudes, and any differences of TAG students grouped in homogeneous and heterogeneous classrooms. Differences in perceptions of the teachers' expectations between the class groups occurred, however students in both groups' self-perception experiences were positive. For students homogeneously grouped for instruction, positive academic changes were found. Yang, Gentry, and Choi (2012) conducted a large comparison of South Korean TAG students' perceptions of pull-out programs and regular

classes versus regular education students' perceptions of their classes and found grouping within the regular classroom challenged TAG students.

Page and Keith (1996) stated that when assignments are made without considering the intellectual ability of students, the future of the students is at stake, most especially gifted students' futures. VanTassel-Baska (2006) predicted that gifted programs would begin to lose funding if school systems did not design programs and use models appropriate for the gifted learner. She attributed the problems in gifted education to the lack of abundant research, too many models, and too many definitions of giftedness. Rogers (2002) concurred and said, "With the concern for 'at risk' students of high priority nationally, educators continue to search for a method that will keep these students involved and successful in school" (Rogers, 2002, p. 104). The contributions from this study were unique in that they added to the knowledge of how TAG students learn best through their own perceptions. Their voices were heard through the focus groups, interviews, self-perception profile, and supported with their achievement results. The findings from this study, which used the perceptions and achievement of students enroll did not only contribute to the body of knowledge on gifted education, but enabled teachers to use the findings in development of instructional strategies and groupings in the classrooms with gifted students. System curriculum directors and administrators were able to use the findings to assign program options to gifted students for the best possible education. The best possible education provided the opportunity to have motivated and involved students interested in having successful school careers.

Chapter II

REVIEW OF LITERATURE

Gifted Student Education

Determining an effective program model for the education of the gifted and talented (TAG) student is difficult at best (French, Walker, & Shore, 2011). The use of the cluster grouping model has been promoted by experts in the gifted education discipline, however there has been a lack of empirical research to support assertions of the effectiveness of the model (Brulles, Saunders, & Cohn, 2010). Studying the attitudes and beliefs of all the stakeholders, students, parents, teachers, and even administrators has been important when making decisions on implementation of programs which best served the gifted population (Cross et al., 2010). Jost (1997) stated that in the recent past, public schools dealt with gifted students' education by placing them in regular classrooms and teaching them with the same curriculum designed for the average ability student. Placement in regular classrooms and instructing from the standard curriculum was the solution to increased class sizes, budget cuts, and untrained teachers unable to provide challenging lessons for the gifted population. Glass (2005) reported that the norm for gifted students is to be enrolled in a regular classroom, taught with the standard curriculum written for the average student, and with the exception of a very small number of students, provided with no special instruction to address their high abilities. The gifted students' regular education teacher became the sole provider of instruction for the students.

Little (2012) reported:

> Students noted that, in general, their regular classroom experiences were not very challenging, and they defined lack of challenge by such features as slow pace, too much repetition, inability to move forward after achieving mastery, and lack of opportunity to pursue personal interests or to focus on thinking skills rather than mastery of facts. (p. 697)

Historical Background of the Talented and Gifted Student

Before the advent of the intelligence test, students were not identified as "gifted children" as Borland (2005) stated. Factors such as mental tests, cultural, and political ideas led to the concept of giftedness. The tests of mental abilities became the way the professionals could assess students' giftedness (Borland, 2005). They became tools which were seen as guides to group children. The grouping of children was helpful to school officials because an influx of immigrants and the school population continued to rise as more people sent their children to school because of changes in the laws concerning required education (Borland, 2005). After World War I, the intelligence tests became more widely used by the schools and a varied population of mental abilities became apparent. The control of students for behavior and grouping them for instruction became the norm. A scale had to be devised with below normal, normal, and above normal and thus emerged the label of "giftedness" as it was designated on a continuum (Borland, 2005). The characteristics of the students who were below and above the normal range and how they interacted with the curriculum led to the creation and implementation of grouping students based upon where they fell on the continuum of the intelligence tests. Borland (2005) asked when students became separated into groups, the gifted and the non-gifted. He asserted that the definitions of gifted were not empirical but were devised

from principles and procedures. Borland did not question whether there were gifted individuals, but whether they were being educated appropriately or being harmed (Borland, 2005).

For almost 100 years the definition of giftedness has been changing and evolving in conjunction with how to best serve the TAG student. As educators we believe that there are children who learn and behave differently from their peers (Callahan & Hertberg-Davis, 2013). Some of those children have been judged to outperform their peers in creative, intellectual, and behavioral ways. These children learn differently and should be taught in the ways they learn best for ideal growth. A "federal definition" of giftedness emerged with the Marland Report (Report to the Congress of the United States, 1972). At that time intellectual ability, creativity, and academic aptitude were included in the characteristics of giftedness. Twenty-five years later the emergence of the Renzulli's Schoolwide Enrichment Model (SEM) became the model for educating the gifted students. Renzulli's SEM used curriculum compacting, enrichment classes, and interest and learning style assessments. (Bain, Bourgeois, & Pappas, 2003; Callahan & Hertberg-Davis, 2013; VanTassel-Baska & Brown, 2007).

Gifted and talented students, many of whom had an understanding, rate of learning, and knowledge base that exceeded that of their age peers, needed a learning experience geared for them. Although some of them excelled in all academic areas, many of the gifted students had exceptional abilities in one area. Differentiating the curriculum to fit their needs and provide the best learning experience required a shift in philosophy for schools and teachers (Blanksby, 1999).

Along with a discussion of the fluctuating definition of giftedness a discussion of the most influential paradigms in the United States and how those paradigms have shaped curriculum, instruction, and policy for the TAG student was necessary. Dai and Chen (2013) compared the three governing methodologies in gifted education: gifted child, talent development, and differentiation. The gifted child methodology dominated the 20th Century until the emergent of the talent development methodology in the 1980s. According to Dai and Chen (2013) and Borland (2009), an integral piece of the gifted child methodology is the belief that giftedness is measured by intelligence tests and is a human quality. The talent development paradigm expanded the idea that giftedness was not only IQ but included talents such as artistic, social, athletic, and writing. Known in the gifted education field as the "three-ring model of giftedness" (Dai & Chen, 2013), Renzulli (1978) called for developing the child's giftedness along with identifying it. The differentiation paradigm, which is the third and predominant model currently used, was introduced as an answer to the special education inclusion policies in the beginning of the 21st Century and the use of the pull-out model to meet the needs of talented and gifted students. With inclusion for students with special needs, including TAG students, differentiation and Response to Intervention (RtI) instructional strategies were used in the regular classroom (Dai & Chen, 2013).

Although labeling students is not an integral part of the present study, herein it has had an effect on program options the TAG student has been placed in and deserves a mention. Educators used labeling to describe the needs of a child and then to prescribe the educational goals. Prescribing educational goals based upon labeling students is true

not only for the student with special needs, but for the talented and gifted identified student, as well.

What happens to children when they are labeled? Gates (2010) explained, "The label was a hindrance to her own self-concept but also brought some sense of identity to her. Key to these issues is the manner in which the labels are used or explained" (p. 202). Sometimes those labels caused unwanted effects with the types of courses assigned to the children and more importantly to the perceptions and expectations the children had for themselves and others had for them. TAG students were assigned courses of study they had no interest in taking but because of their intellectual abilities were enrolled in those courses. The lack of interest in the course gave an impression of laziness to educators. Gifted students were often inquisitive and teachers were found to be wary of teaching them because they found the TAG students to be bothersome in class by interrupting lessons with too many questions. Gates (2010) found that some educators would rather not teach students with gifted behaviors because they would monopolize class discussions, ask so many questions that time became a problem, and steer the discussion in a direction other than the one intended. Other educators found the TAG students did not exhibit the behaviors they expected of a TAG student such as acting more adult like because they were gifted or seeming to work at a lower level than expected.

Theory for Research of Talented and Gifted Student Education

Each methodology or paradigm had its own emphasis on the education of the TAG student, identification procedures, and instructional methods said Dai and Chen (2013). For example, with the gifted child paradigm, the emphasis was on the welfare of the student and the advancement of humans. IQ tests were used for identification and

instruction included such options as pull-out, enrichment, self-contained, and acceleration. As an alternative, the talent development paradigm evolved from the gifted child paradigm with an inclusion of creative giftedness and specific gifted abilities which were not evidenced with an IQ test. The talent development methodology placed the emphasis more on the social and cultural development of the student's abilities. Program options included AP courses, enrichment activities, clubs and organizations, and authentic opportunities for developing talents. Although differentiation had been used in classrooms for many years, it was a recent paradigm for TAG students. The differentiation paradigm was designed for each individual student. It was flexible and adaptable. Heterogeneous grouping in a regular education classroom provided the backdrop for individual instruction which consisted of pacing of the content, acceleration of subjects and content, with-in class groupings, and authentic projects, to name a few options. Identification of students included achievement, aptitude, and creativity tests, Response to Intervention (RtI), nominations from parents, teachers, and the student, and diagnosing strengths and weaknesses of students. Dai and Chen (2013) concluded by questioning whether the paradigms, which continued to be used, divided the gifted education field. Dai and Chen (2013) hoped their work would lead educators to use their "4W framework" (p. 164), asking who, what, why, and how before implementing a methodology.

Theoretical Models of Instruction

Examination of the research showed three different theoretical models of instruction generally used. The program models were typically based on Gardner's Multiple Intelligences, Renzulli's Enrichment Triad, or Bloom's Taxonomy (Bain et al.,

2003; VanTassel-Baska & Brown, 2007). Multiple groupings, cluster grouped classrooms, enrichment programs, and pull-out programs were the most widely used programs of instruction because of the research and development of the programs. Additionally, those programs had demonstrated some effectiveness in learning (Bain, et al., 2003; Brulles & Winebrenner, 2011; Cross et al., 2010; Mogensen, 2011; Tieso, 2005; VanTassel-Baska & Brown, 2007).

Models of Acceleration, Enrichment, and Differentiation

The Stanley model of acceleration (Stanley, Keating, & Fox, 1974), the Renzulli model of enrichment (Renzulli, 1977, 1988), and Gardner's Multiple Intelligences (MI) model (Gardner, 1983) had been employed since the 1970s and have research, development, and implementation evidence of effectiveness. The Stanley model of Talent Identification and Development was intended to educate the student throughout his/her lifetime by using acceleration based on the individual student's test diagnosis (Stanley et al., 1974; VanTassel-Baska & Brown, 2007). On the other hand, the Renzulli model used the Schoolwide Enrichment Triad Model (SEM) (Renzulli, 1977, 1988) which had a less rigid identification program for students. The model had been adopted by many school districts and was developed after 15 years of field testing and research. It used curriculum compacting, enrichment classes, and interest and learning style assessments. Gardner's (1983) MI model employed the theory that people are gifted in some areas, but not necessarily all areas of intelligence. VanTassel and Brown (2007) along with Bain et al. (2003), reported schools and districts had used the MI model for identification of students, planning and developing curriculum, designing instructional methods, and forming new schools (Bain et al., 2003; VanTassel-Baska & Brown, 2007).

The authors of previous research suggested that programming options were grouped under the three broad categories of enrichment (Renzulli's model), acceleration (Stanley's model), and differentiation (Gardner's MI model). Bain et al. (2003) surveyed teachers of gifted students in the southeast, for the identification of teaching models used and the teachers' knowledge of theoretical instructional models. The researchers reported theoretical models which received the most responses to their survey. Each of these models was a basis for instruction, assessment measures, and program models used in gifted education. Bloom's Taxonomy of Educational Objectives was one of the theoretical models used because of the cognitive and affective taxonomies. Gifted education used processes in research and Bloom's taxonomy in designing an accelerated curriculum using higher order thinking skills. Renzulli's Enrichment Triad Model is used in many districts across the United States and garnered the most responses to the authors' survey. Another model which received responses in the survey was Gardner's MI model (Gardner, 1983). As previously described, this model addressed the many areas in which a student could be identified gifted and required teachers to plan and instruct for each area in which a child was considered to be gifted or talented (Bain et al., 2003).

Some of the responses from the study conducted by Bain et al. (2003) regarding using Gardner's MI model and differentiation of lessons, reported teachers claimed planning and instruction to accommodate each student was difficult. Archambault et al. (1993) conducted a Classroom Practices Survey for The National Research Center on the Gifted and Talented (NRC/GT) to determine how much gifted students received differentiation within a regular classroom setting. Typically, few and limited modifications were used to meet the needs of the gifted students. These modifications

consisted of giving more advanced work, eliminating material previously mastered, assigning additional readings, enrichment activities, independent projects, and various reports. A surprising finding from the study was that services provided in schools with formal gifted programs were similar to those services provided gifted students in regular classrooms in schools without formal programs.

Grouping for Instruction

Schuler (1997) found there were several alternatives available for grouping, from using mentors with individual students, to providing special classes or schools with the enrollment consisting of only gifted students. Within the range of options was flexible grouping within a class. Grouping by ability was one option schools chose that was cost effective. This option did not involve the hiring of additional teachers. Flexible grouping within a class setting afforded the teacher the opportunity to differentiate instruction and assignments. Unfortunately, since most elementary schools in the United States used classroom settings which were inclusive and heterogeneously grouped, there was not a lot of differentiation within the classroom. Cramond and Brodsky (1996) suggested evidence indicating that there was a decrease in higher ability students' achievement scores when they were regrouped heterogeneously. VanTassel-Baska (2003) agreed the gifted student was not challenged and even the other learners may not have received the benefits of differentiated instruction when the teacher delivered the same material in the same way to all students.

Conducting a large analysis of gifted programs, VanTassel-Baska (2006) evaluated 20 school districts' gifted programs using seven separate evaluations of the programs. The programs were located in urban, suburban, and rural districts and

encompassed self-contained, pull-out, cluster, and magnet gifted services in elementary and middle schools. Teachers, parents, and students were interviewed, surveyed, and observed. The findings were evaluated on three levels. At the broadest level identification of TAG students was problematic, differentiation of the curriculum was a problem, staff development for teachers was inadequate, there was a lack of parent involvement, a need for an evaluation process of the gifted program existed, gifted services for languages and social sciences was limited, and there was a lack of personnel and resources. More defining, on the second level, VanTassel-Baska found teachers and administrators willing do what it takes for the program, parents who believed the students were receiving challenging activities, a lack of program accountability, inadequate training for teachers and administrators, a lack of resources, and program confusion and disorganization with definitions, curriculum, philosophy, and operations. Coordination between and among grade levels, schools, and districts created no ability for students to grow academically as they moved from grade to grade. The lack of standardization gave the overall impression of a haphazard program. At the highest level, VanTassel-Baska stated that the gifted program had been neglected by not addressing a need for common standards and delivery models based on research. The academic, intellectual, creative, artistic abilities of TAG students should have been considered when designing services. Systems bound by limited resources bowed to outside influences and did not consider gifted education a priority. Meaningful learning activities using the students' interests and experiences were underutilized. Although many programs used grouping practices which would have been appropriate, there was no evidence of curricular differentiation which made the grouping

ineffective. This was also true of regular classroom teachers who did not have training or the resources to accord the TAG students a differentiated curriculum.

Ability Grouping for Instruction

The NAGC position paper (2009) defined ability programs by whether they were full time programs, self-contained, special, or cluster. Full time gifted programs were offered to within grade or across grade levels at one school for all content areas and were appropriately differentiated. Self-contained classes were full time, but homogeneous and all the content was differentiated. Magnet schools were considered to be special programs and the gifted students were housed in one building and received services all day. With-in the regular education classrooms differentiated learning occurred with like ability cooperation groups.

A widely accepted definition of ability grouping is "regrouping for the purpose of providing curriculum aimed at a common instructional level" (Fiedler et al., 2002, p. 2). With this definition in mind, Rogers (2002) concluded from an extensive analysis of full time ability grouping, that there are many effects, both positive and negative for ability grouping. Rogers concluded that grouping by ability was effective and efficient for gifted learners to accomplish several educational goals. Gifted students must be in groups to broaden, extend, and accelerate. Without a variety of ability grouping arrangements, these gifted students did not receive the instruction pacing, content depth, and advanced knowledge they needed. Tieso (2003) concurred and added modification of all the content areas for students of all abilities to include modifying the pace of the lessons was encompassed in the definition of ability grouping. However, Kulik (1993) cautioned that ability grouping alone was not the answer and would not be productive for students

unless the curriculum was differentiated for the students. By not providing the appropriate acceleration, enrichment, higher order thinking skills activities, or even remediation, a student's educational goals were not met.

Borland (2005) suggested the time was right for a shift in the paradigm for educating the gifted. With the recognition of multiple talents and gifts in an increasing number of areas, more children were being identified as TAG students. Differentiating the curriculum and flexible grouping was the modus operandi for below average and above average students in classrooms. Vygotsky's Sociocultural Theory and ZPD described how critical for all learners to have their cognitive abilities developed. Just as skills and lessons are developed for the less than average students, so should the talented and gifted students have the ability to learn from their peers and be taught with curriculum and models appropriate for their development (Reutzel & Cooter, 2004; Roe, et al., 2005; Slegers, 1996; Tuckman & Monetti, 2011)

Current Literature of Talented and Gifted Student Educational Programs

Hertberg-Davis and Callahan (2013) described pull-out programs and cluster grouping as examples of "service delivery options" (Hertberg-Davis & Callahan, 2013, p. 161). The names of the options informed as to the settings and groupings for the TAG students. These options delineated the location of services, how the instruction would be delivered, the time provision, and who provided the instruction. On the other hand, when defining "programming models" ((Hertberg-Davis & Callahan, 2013, p. 161) their components included the entire school's program, groupings of all the TAG students in the school, all the settings for instruction of TAG students, and all the types of curriculum used for TAG students. The school philosophy for gifted education determined the

delivery option a school chose to adopt. The belief that students should be instructed throughout the day and grouped together in a heterogeneous class led a school to choose a cluster group option. Conversely, choosing the pull-out option suggested the idea that the TAG students' learning would be developed through a part-time delivery option.

VanTassel-Baska (2006) advanced apprehensions after discovery of one third of the elementary schools in her study using cluster and inclusion delivery models. As the only means of services for the TAG student the concern was that differentiation of instruction and curriculum were inadequate. Additionally, three-quarters of the elementary schools in the study used the pull-out model. However, the resource teachers and regular classroom teachers did not coordinate or collaborate on the curriculum for the students. Addressing these areas was vital to creating quality and enduring programs. Borland (2013) said we as educators, needed to reevaluate our reasons for teaching the gifted student. Gifted educators should be searching for the models and programs which best address the best possible education for the gifted student. Gifted education does not have to be designed for "elitist, racist, sexist, or blighted by social-economic inequities" (Borland, 2013, p. 77). However, educators of the gifted can design programs and delivery options which were suitable and provide the best education possible for the TAG student.

Cluster Grouping Model Overview

In an effort to determine the best model for gifted education in the 21st Century, Brulles and Winebrenner (2011) and Cross et al., (2010), described and compared two popular models: cluster and pull-out. When gifted students were grouped together within a regular classroom of mixed ability students this grouping was known as the cluster

grouping model. The teacher in the cluster grouped classroom provided challenging and differentiated lessons and instructions throughout the school day (Brulles & Winebrenner, 2011; Cross et al., 2010; Gentry & Fugate, 2013).

Schuler (1997) defined cluster grouping as:

> Cluster grouping is when identified gifted students at a grade level are assigned to one classroom with a teacher who has special training in how to teach gifted students. The other students in their assigned class are of mixed ability. Differentiated instructional opportunities allow gifted students to interact with their intellectual as well as their age peers. Through cluster grouping the intellectual, social, and emotional needs of the gifted students can be addressed. (p. 1).

Cluster grouping involved a group of three to ten students who have been identified as gifted and talented. These students were usually the top 5% of ability in the grade level. The teacher was a regular education teacher with specialized training in teaching children with gifted abilities (Gentry & Fugate, 2013; McGrail, 2005; NAGC, 2009; Schuler, 1997; Winebrenner & Devlin, 2001). Fiedler et al. (2002) added that cluster grouping was a small group of students with the same instructional needs grouped together in a limited number within a heterogeneous arranged classroom. VanTassel-Baska and Stambaugh (2006) described the enrollment of gifted students in the cluster class as a purposeful grouping of the highest ability and intelligent students within one classroom. The teacher modified the content and curriculum throughout the day for the gifted students. Riley (2005) claimed the success of the cluster grouping relied on not only the grouping of the students but the differentiation of the lessons. The quality of the

differentiation happened when support of training and professional development was given to the cluster teachers responsible for the students' learning.

Teno (2000) and Fiedler et al. (2002) added that a cluster grouped classroom consisted of TAG students placed together with a trained regular education teacher in practices of differentiation for gifted students. The students were placed in a heterogeneously grouped grade level classroom. During the academic courses they received challenging activities with their gifted peers that were different from the other students' activities in the classroom. Although the students remained in the mixed classroom throughout the day, the groupings within the classroom were fluid within the academic courses. Winebrenner and Devlin (2001) concurred and added in their article that cluster grouping was not a system of tracking. Clustering the TAG students allowed them to work and learn together throughout the day. Gentry (1999) summed, described, and later updated (Gentry & Fugate, 2013; Gentry & MacDougall, 2007) that certain factors have remained constant through the years with cluster grouping. They are: (a) teachers in the cluster classroom are trained to teach gifted students; (b) the curriculum within the classroom is differentiated for the students; and (c) the gifted identified students (3-10) are placed with students of other academic abilities in the classroom.

Students enrolled in cluster grouped classrooms were able to take advantage of flexible groupings. Cluster grouping was one of the most promising forms of delivery for the gifted student. Students were able to be grouped based on their current needs and performance and the instruction provided matched their instructional needs (Borland et al., 2002; NAGC, 2009). Gentry and Owen (1999) undertook a longitudinal investigation of a cluster grouping program in an elementary school. The comparative elementary

school did not use grouping strategies for their TAG students. Qualitative and quantitative data were collected over the course of 4 years. Data were collected on the student participants who were studied from their second grade through fifth grade school years. Teachers in the treatment school reported using not only cluster grouping, but between-class and with-in class groupings for instruction. However, teachers reported that using cluster grouping and removing the TAG students from the regular classrooms enabled the high ability students to emerge within the regular classrooms. Having TAG students clustered helped the regular classroom teacher to focus on their abilities and differentiate lessons for them to reach their potential. At the conclusion of the study the teachers reported there were more high ability students identified each year due to the clustering of the TAG students. Reading scores showed positive significant increases for the students in the treatment school which was attributed to clustering and regrouping for instruction within the classrooms. The teachers stated they were better able to meet the needs of all the students by clustering. Students of similar ability were able to work together, teachers were able to spend more time on skills appropriate to each level, and high achievers and TAG students were able to work together and challenge each other. Clustering aided positive transformations within the classrooms and environment of the school.

Gentry and MacDougall (2007) found that what cluster grouping meant to most educators is that when teachers made adjustments to accommodate the student's ability and level of skill by differentiating instructional methods, strategies, and the curriculum, all the students, no matter their ability received benefits.

The practice of putting a cluster of gifted students in a classroom with a teacher who had expertise on differentiating the curriculum and instruction was in keeping with providing for the needs of the higher ability students to be with their intellectual peers. They were appropriately challenged and were able to view their abilities in a more realistic way (Fiedler et al., 2002). The benefits for gifted, average, and below average students when the gifted students were placed in their own cluster of gifted students for at least part of the day has been documented. Some of the benefits included the TAG students' attitudes changed in a positive direction about cooperative learning, teachers were able to plan more appropriate and challenging activities for the clustered group, average and below average students became less reliant on the gifted students to serve as their tutors and gained in achievement (Winebrenner & Devlin, 2001).

Dexter (1998) described a first year cluster grouped fourth grade classroom. Instructional strategies used within the class included individual pacing in math. Each of the gifted students was given options to participate with the regular class for the first part of the lesson and then go to the library to work independently. Their independent assignments were activities designed by the teacher to compact the curriculum. They also had a choice to work by themselves for the entire class period. Differentiation was used in other content areas such as spelling, social studies, and reading. Providing challenges appropriate for the TAG students was a challenge for teachers. Surveys were administered to parents and students to discover the stakeholders' perceptions of the lesson. The findings from the surveys were that students and parents were pleased with cluster grouping and believed students were challenged appropriately. The parents liked having students have their peers to work with throughout the day.

In two nationwide surveys of schools, a Cluster Grouping Survey (Hoover & Sayler, 1993) examined a variety of cluster grouping issues. These surveys addressed defining cluster grouping, where the cluster grouping occurred, district/school policies of cluster grouping, selection of students, training of teachers, program options, advantages and disadvantages of cluster grouping, and academic and social effects. Schuler (1997) reported the respondents indicated a wide array of training for their cluster teachers ranging from volunteer teachers to teachers who received extensive training. The districts who reported the greatest satisfaction with cluster grouping and the most positive reactions were the ones with the most in-service support. Quality of differentiated instruction was reported to be the difference in cluster and non-cluster classrooms with whole class enrichment an ongoing practice. Students' and parents' reactions were positive and included requests for non-gifted students to be included in cluster classrooms so they could benefit from the enrichments provided. Parents and students preferred the cluster grouping to the total heterogeneously grouped classroom. Academics and attitudes of gifted and non-identified students were positively increased through the cluster grouping due to the more formal differentiation and teachers' better understanding of the learning process.

Cluster grouping allowed the gifted student the opportunity to interact with age peers throughout the day and also to learn with other students of like ability. Gifted students needed to be placed with other gifted students in their areas of strength so they could learn together. The intellectual, emotional, and social needs of the gifted student could be met through cluster grouping (Schuler, 1997; VanTassel-Baska & Stambaugh, 2006). Hoover and Sayler (1993) described the interaction of the TAG students with their

peers in clustered classrooms to be stimulating for their social and mental activities. Placing the gifted students in regular education classes throughout the day allowed groups to remain flexible and avoid static groupings (Winebrenner & Devlin, 2001).

Unlike the classrooms observed and reported by Archambault et al. (1993), Gentry and Keilty (2004) found in their study of the program success of a 16 year cluster grouping in two school districts that cluster teachers challenged students by planning activities of a progressive nature. The teachers did not give additional activities but instead used ones of at a lower place on Bloom's Taxonomy in the higher order thinking skill activities. Acceleration through parts of lessons, enrichment activities, and independent projects were all used to differentiate. The cluster teachers sometimes used these differentiation techniques with the entire class of mixed ability students, sometimes the cluster students only, and sometimes the cluster students and a few others. Cluster teachers were also found to be using a variety of instructional strategies, challenging activities, and student-directed learning.

Cluster Grouping Advantages

A few of the more critical rewards to cluster grouped students were:

1. Higher achievement in academics (Tieso, 2005);
2. Challenging activities at appropriate levels (Rogers, 2003);
3. Cost effective for school systems because additional personnel are not necessary for full-time services (Hoover et al., 1993; VanTassel-Baska & Stambaugh, 2006);

4. Full-time service is offered to students for the entire school day and throughout the Week (Gentry & MacDougall, 2007; Gentry & Owen, 1999; VanTassel-Baska & Stambaugh, 2006);
5. Trained teachers interested in differentiation and working with the gifted (Kulik & Kulik, 1992; Rogers, 2003)
6. Students of high ability enrolled in the other not clustered grade level classes were able to develop as academic leaders (Gentry & Owen, 1999; Kennedy, 1989);

An advantage for the gifted resource teacher in schools where cluster grouping is the model, the resource teacher was better able to manage the scheduling of providing additional services for the students. Working with one or two regular education teachers was much easier than trying to schedule with six or seven teachers. Schools which used heterogeneous grouping usually had the gifted students placed one or two to each room. Placing one or two TAG students per room made it difficult for the resource teacher to provide adequate services or help the individual students and teachers because they had to work with each individual teacher's schedule (Winebrenner & Devlin, 2001). In agreement, Hoover and Sayler (1993) included in their report that teachers were unable to communicate on a regular basis with the resource teacher about a TAG student's education plan. By assigning the students to one teacher, communication with the resource teacher became easier. The challenge then became one for the teacher to develop differentiated lessons and pacing throughout the content areas as they were the sole provider for the TAG student's instruction.

Schuler (1997) reported other advantages of cluster grouping were the higher level of expectations for students, challenging activities, and intellectual stimulation. Teachers were allowed to group students based on need and were able to have more responsibility for the needs of the gifted students. Many of the districts surveyed in the Cluster Grouping Survey indicated that the expectations for the whole class were higher. They also found that the cluster model was a more efficient delivery of services because all the students in all the grades were served. Administrators reported cluster grouping as a way for them to observe and ensure differentiation in an easier fashion. A recommendation was for cluster teachers to have specialist consultants available to help them meet the needs of gifted students.

The NAGC (2009) position paper and Rogers (2002) stated that the research indicated that full time options showed "substantial academic effects and small, positive gains" in social skills, self-esteem, self-efficacy, and motivation when TAG students were grouped together fulltime (NAGC, 2009; Rogers, 2002). A few years later, Rogers (2006) stated TAG students' academic achievement, increased motivation, positive attitudes, perceptions of challenging lessons, and social experiences were well documented for increased gains in each area when these students were grouped for ability full-time. In particular, Rogers (2006) and Kulik and Kulik (192) found gifted students grouped with only non-gifted students had unrealistically high academic self-esteem and when TAG students were grouped with other like-ability students their academic self-esteem was more realistic because they were able to compare themselves.

Hoover and Sayler (1993) examined the effects of clustering using questionnaires for parents, students, and teachers. Of Indiana's 46 districts, 22 responded they had used

clustered grouped classrooms. The responses to the survey reported positive findings for teachers' and parents' attitudes towards the clustering program. However, regular education teachers' attitudes were rated neutral and some negative. Eighty-four percent of clustered teachers rated the clustering of TAG and regular education students as a positive relationship for academics for both groups. Ninety-six percent of the teachers rated academic achievement, motivation, and social skills increased for the TAG students after being in a clustered classroom. Howard and Sayler (1993) found that clustering, unlike a pull-out program was not as distracting for students and teachers because students were not entering and exiting the classroom throughout the day to attend resource classes. Kennedy (as cited in Hoover & Sayler, 1993) reported that below level and on grade level students had increased achievement scores when the presence and competition of higher achieving students were removed from the classroom and placed in clustered classrooms.

Schuler's (1997) results of the Cluster Grouping Survey were consistent with other research studies that the cluster grouping approach benefited gifted students. However, the planning and delivery needed to be carefully considered for the program's success. The opportunities to interact with their peers socially, emotionally, and intellectually were notable benefits for the TAG students (Schuler, 1997). The potential of cluster grouping as an effective means of meeting the gifted students' needs was confirmed by Blanksby (1999) in her study of a cluster grouping project in Australia. The Cluster Group Project had been ongoing for two years. She confirmed that the literature supported cluster grouping as an effective strategy and needed to be implemented and supported. In their study of the differences between homogeneous and heterogeneous

settings, Sheppard & Kanevsky (1999) found the gifted students from the group clustered together were more willing to contribute to discussions, talk with their peers, and express ideas. The students from the class with only a few gifted students were more concerned with finding the correct answer, less spontaneous, and had less self-confidence. This difference was attributed to the group of clustered students having the opportunity to work together throughout the day, each day and have the ability to share their ideas and work. Teno (2000) observed clustered students were able to work at their own pace and exhibited more enthusiasm for learning because of their own pacing. Later, Winebrenner and Devlin (2001) noticed that the isolation and stress that some of the students experienced were minimized by clustering students together. Winebrenner (2001)) stated that when students are clustered they were able to choose more challenging projects and activities which provided more breadth and depth to the curriculum.

Cluster Grouping Disadvantages

Schuler (1997) and Blanksby (1999) found some of the disadvantages included the implementing of the process. Some teachers had to change their teaching methods from the more traditional approaches. Funds for training and in-service trainings were lacking. Staffing and feelings of inadequacy or inexperience also posed a problem. Some of the respondents expressed resentment towards gifted resource teachers and cluster class teachers.

Winebrenner and Devlin (2001) indicated that gifted students placed in heterogeneous grouped classrooms tended to become the tutors of their mixed ability peers in collaborative groups. Gifted students needed to have the opportunities to work in groups with others of the same abilities to foster their leadership styles and benefit from

others' leadership. Often the gifted student was the one to perform most of the assigned group work. When gifted students were clustered, the tasks were divided in a more equitable division.

Cluster Grouping Summary

Rogers (2002) sought to determine the effects of grouping gifted students by considering the costs, academic effects, social and psychological effects, and the different types of groupings with a meta-analysis of 13 research syntheses which had been done previously. The analysis found there were full-time, cluster, acceleration, enrichment, cross-grade, pull-out, with-in class, and cooperative groupings used for educating the TAG student. There were substantial academic gains for the majority of the groupings with effect sizes of + .30 considered significant (Rogers, 2002). The study reported a small number of studies available in which to report effects of psychological and social variables. Of those available no discernible effects either positive or negative for the individual groupings were noted. The meta-analysis raised concerns listed in the studies such as teacher morale, teacher expectations, and instructional strategies teachers choose, teachers' perceptions of students and their performances past and present, placement decisions and a disproportionate number of students in lower ability groups who are minority or economically disadvantaged, separation of gifted students from the average student, and the same educational plan for every child whether they fit the mold or not.

In an earlier study Winebrenner and Devlin (2001) reported regular education teachers questioned why gifted students should be grouped together within one classroom and not distributed evenly among all the classes in a grade level. Gifted students benefited from being together with others with like abilities. They were better able to

understand their learning differences and accept them. When gifted students were assigned to classes with only themselves or one other of like ability they usually did not receive the differentiation necessary to stimulate and challenge them even though they had mastered the material being presented to the rest of their classmates. They were expected to succeed on their own. Teachers in cluster groupings found they were better able to differentiate for the gifted students when they had a cluster of gifted students. The teachers were better able to provide challenging and new material with a cluster grouping rather than a heterogeneous grouping.

Rogers (2002) reported declining test scores in achievement and attitude were the costs listed as effects of not providing grouping for the gifted student. It is just as important today as when Rogers originally concluded in 1993, "Gifted learners need some form of grouping by ability to effectively and efficiently accomplish several educational goals, including appropriately broadened, extended, and accelerated curricula" (Rogers, 2002, p. 112).

Pull-out Model Overview

According to the NAGC (2009), the most common model of delivery services was the pull-out model other than the regular classroom instruction. NAGC claimed the pull-out model was the most common model used was true 20 years ago. Pull-out programs were easy to use and less of an expense when one teacher in a building could be used rather than multiple teachers with gifted certification. This model was also synonymous with a resource teacher. Pull-out programs had been designated the part-time solution for a full-time problem. Borland (2013) called it an "archetypal gifted program" (Borland, 2013, p. 70). Believing that the gifted student was receiving the best

education possible from the resource teacher was easy to understand when the regular classroom teachers believed the student's learning goals were being met elsewhere (NAGC, 2009). In *The State of the States in Gifted Education 2010-2011 Report* (NAGC, 2013) stated that the delivery models most often used in schools K-5 were the resource room (pull-out model), regular classroom, cluster classroom, and self-paced learning or continuous progress (see Figures 2 and 3). The four program models stayed the same although the order of delivery differed between resource and regular classroom being the number one choice for delivery kindergarten through fifth grades. Not until middle school, when honors classes became an option for high ability students, were self-contained delivery models used. Gubbins (2013) and Rogers (2002) added that the pull-out model is the one most often used in elementary school settings. The pull-out model gathers together gifted identified students from multiple regular education classrooms and places them in another classroom for a specified period of time of content instruction or enrichment. The pull-out model was also referred to as a "resource program" or "enrichment program." Programs differed for length of time to daily or weekly although the same amongst all the programs was that the TAG students were removed from the regular classroom to another classroom for instruction.

Borland's definition (Borland, 2003) of a pull-out program is one in which students were removed from their regular classroom to meet with a certified teacher and other identified gifted students for a period of instruction which enriched or extended their learning. Time spent in the pull-out class varied from district to district. Some models used a daily time during core classes while others included a once-a-week time.

The amount of time was usually driven by availability of monies, personnel, and facilities in addition to the school and district philosophy.

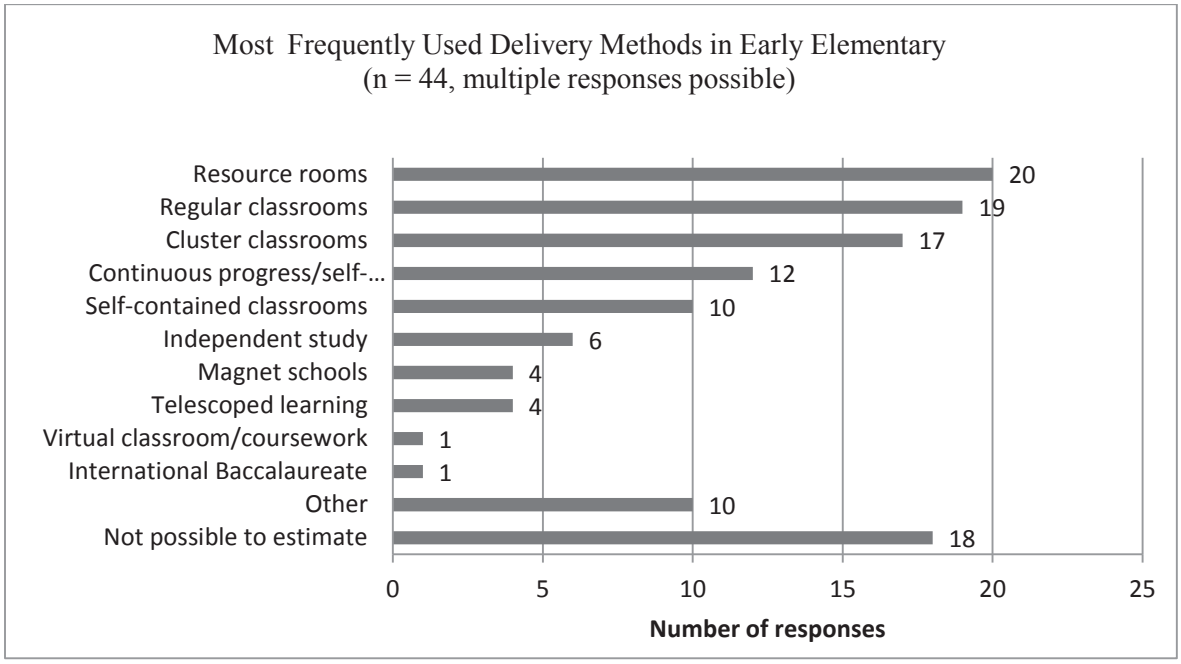

Figure 2. Delivery methods for gifted education (1-3 grades) Summary of Findings (*State of the States in Gifted Education* 2010-2011).

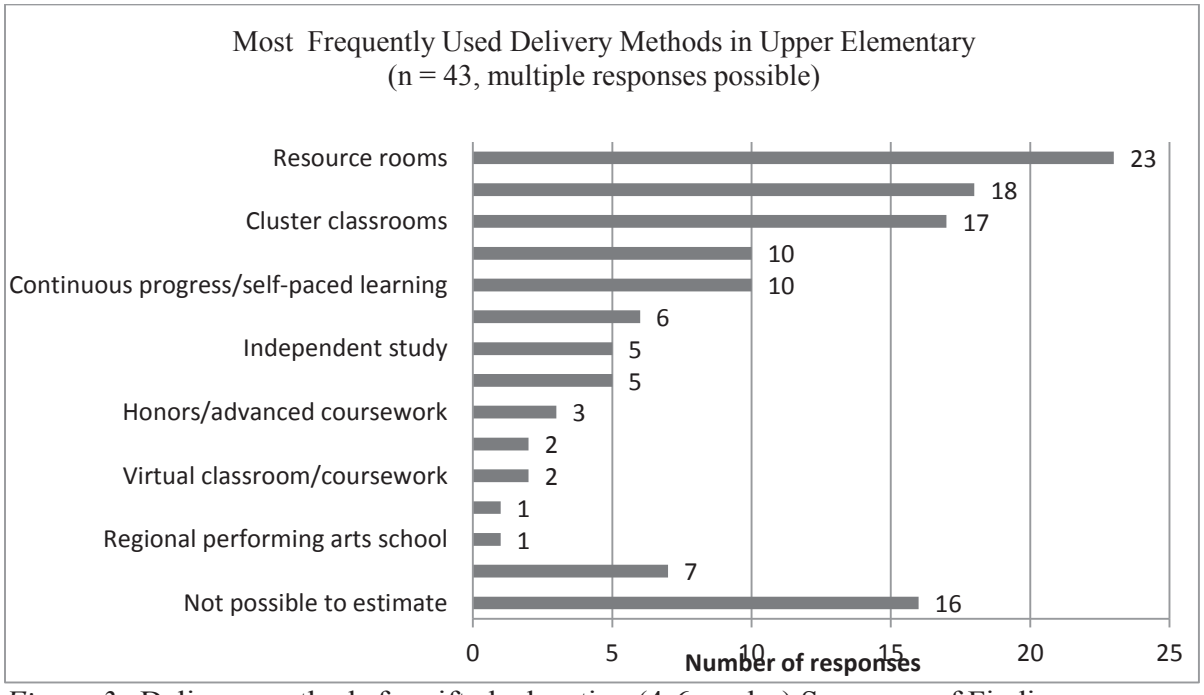

Figure 3. Delivery methods for gifted education (4-6 grades) Summary of Findings (*State of the States in Gifted Education* 2010-2011).

Pull-out Program Advantages

At the elementary level, the pull-out model of instruction for the gifted student was the predominant model used in the United States. Although the pull-out model provided the opportunity for gifted students to be grouped together, the model was usually for one period of time during the day and for only one subject (Rogers, 2002, VanTassel-Baska & Stambaugh, 2006). The rest of the day the gifted child spent in the regular education classroom with no differentiated instruction provided. A grouping plan was essential for the gifted student and should have encompassed all the relevant academic areas. Specialized group settings allowed the gifted student to not only interact all day with peers at the TAG student's own ability level, but to advance academically at a speed relative to that TAG student's own ability. The primary way to deliver the differentiated curriculum was by this specialized group setting. Without the specialized group settings the teacher found it more difficult to differentiate for the students (VanTassel-Baska, 2003). When the pull-out option was used and the teacher used curriculum which was an extension or directly related to the curriculum in the regular classroom significant achievement occurred. VanTassel-Baska and Stambaugh (2006) cautioned teachers to avoid enrichment type activities and use standards and lessons which extend the regular classroom's curriculum.

Rogers (2007) found that teachers who taught TAG students through the pull-out program received more widespread training in differentiation than the regular education classroom teacher. They also had more resources for differentiation and less responsibility (day to day responsibility for a heterogeneous classroom) than a regular classroom teacher. The previously mentioned reasons were ones listed as variables which

needed to be considered when comparing achievement results between pull-out programs and full-time programs. However, TAG students' perceptions of their giftedness and program delivery were more positive than those not in pull-out programs Rogers found.

Brighton and Wiley (2013) stated that one of the benefits to using a pull-out program is that students were able to work with students of like abilities. Other benefits were found by Delcourt, Cornell, and Goldberg (2007) when their results showed pull-out programs had more benefits for students than those enrolled in magnet schools or self-contained classes in the areas of self-esteem, attitudes, competence, being challenged, and achieving success.

Pull-out Program Disadvantages

In their comparison of effective models, Brulles & Winebrenner (2011) and Cross et al., (2010) reported the least cost effective model was the pull-out program which required a trained gifted teacher to provide services in a separate setting from the regular classroom from one hour a day to one day a week. The studies reported that the resource teacher taught a content course, sometimes using a replacement curriculum, accelerated grade level standards, enrichment, or independent study.

Borland (2013) described the pull-out program as one in which the curriculum did not represent what is being taught in the regular classroom and as such gave the impression that there were two separate curriculums within the school, one for the gifted class and one for "real school" (Borland, 2013, p. 71). There was a lack of consistency with the scope and sequence in the gifted curriculum Borland observed. Additionally, with regards to differentiating the curriculum for the TAG student, Borland related that

there was no differentiation seen for the students within the pull-out and enrichment programs.

Gentry and MacDougall (2007) stated that scheduling is difficult with multiple teachers and classrooms for a pull-out program to operate. Many teachers across the grade levels must coordinate their lessons and instructions to serve the students who are pulled out on a part-time basis, whether daily or weekly. Support is necessary from all the stakeholders as the gifted students are pulled out for services. However, when a pull-out program is used in conjunction with The Total School Cluster Model, teachers in the regular classroom plan for the remaining students while expecting the gifted students to receive instruction on standards they miss during the pull-out time.

Winebrenner and Brulles (2008) stated that when TAG students were not clustered the regular classroom teacher often did not notice that the student had not gained new knowledge because they had excelled at the average material presented to the entire class. They said teachers who had only one or two TAG students in their classroom were unlikely to differentiate lessons for the students and would use the students as peer tutors. The practice of using TAG students as tutors deprived the students of the opportunity to increase their own learning.

Recent research suggested pull-out grouping was the predominant model as students aged (Assouline, Colangelo, Heo, & Dockery, 2013; Gubbins, 2013). Assouline et al., (2013) studied 5,844 gifted identified participants over a 3 year period. The fourth through sixth graders came from 22 states. The researchers provided a portrait of the kinds of instructional delivery models experienced by upper elementary gifted students in math, science, and language arts in this quantitative study. They measured ways gifted

students were taught in K-12 settings, measured differences on performances for boys and girls, grade, and ability level. Findings showed variations in delivery method for grades and abilities. Grade skipping for math and science was more prevalent for upper grades than lower grades. There was no difference in any area for tutoring. As students got older, more pull-out classes were assigned to the students. The majority of participants received no differentiation in the regular classroom. In an effort to provide a solution the authors stated:

> The pace of the regular classroom is too slow for highly able students. The complexity of the content is not sufficient. Although there is nothing wrong with the regular curriculum, what is "wrong" is the mismatch between academic readiness of gifted students and the level and pace of curriculum of the regular classroom. What is "wrong" is that there is a model the talent search model, which has proven effective at differentiating the needs of high-ability students, yet the model is not implemented in schools (Assouline et al., 2013, p. 143).

Pull-out Program Summary

Gubbins (2013) cautions educators tasked with designing programs for gifted students that there were positive and negative results reported for pull-out programs and it was best that designers looked closely at the actual practices being used in the pull-out program before implementing the design. Pull-out programs were only a part-time program and the rest of the TAG student's daily instruction must be considered. Consideration for all the consequences, effective and ineffective, and designing a program to accommodate for the ineffective results could make a worthwhile option for using pull-out programs.

Brighton and Wiley (2013) reported The National Council for Gifted Children's guidelines for pull-out programs. Pull-out programs did not only have to exhibit best practices but the programs must be partners with teachers in the regular classrooms to make sure students were given every opportunity to receive instruction in the curriculum when they missed it in the regular class because they were pulled out of the classroom. Pull-outs that occurred during a content or core academic time must provide instruction in the state requirements before extending or enriching. The measurements were the indicators for determining whether best practices were being used in the pull-out programs.

Ability Grouping Incorporated With-in Cluster and Pull-out Groups

Gentry and MacDougall (2007) and Kulik and Kulik (1992) offered additional strategies teachers used in grouping practices to provide benefits for students and increase learning. Between-class groupings and with-in class groupings are ones in which not only teachers of the gifted used, but regular classroom teachers availed themselves of them also. Between-class groupings were usually used for content classes and based on student achievement. Across the grade level one or two teachers would be assigned the above grade level group, another the below grade level group, and the on grade level ability students would be split amongst the other teachers. With-in class groupings encompass several types of groupings which were usually flexible and dependent upon the task, content area, and abilities of the students. These included ability grouping for re-teaching specific skills in small groups, cooperative grouping for projects and assignments, tutoring, and discussion groups.

Schoolwide Cluster Model

Offering a model which incorporated all of the effective strategies and best practices for teaching the gifted and talented students, Brulles and Winebrenner (2011) described the Schoolwide Cluster Grouping Model (SCGM). The SCGM contained qualities each model (pull-out, cluster, honors, and self-contained) shared to include: training of teachers specifically for the instruction of gifted students, flexible grouping, curriculum and instruction reflective of the individual needs of the gifted student, support services, availability of peer intellectual groupings, and continuous progress academically for the students. This model was similar to the model of the Total School Cluster Grouping described by Gentry and MacDougall (2007) in which all of the above factors were evidenced in the school program. Students in The Total School Cluster Grouping Model are enrolled in classes to receive benefits such as challenging activities, flexible grouping based on needs and ability, and lessons reflecting students' interests. Enrollment is centered on achievement of the students.

Ability Grouping

VanTassel-Baska and Brown (2007) undertook an analysis to determine which curriculum programs and models were effective based on research, and were models of differentiated learning for the TAG students. Applying their criteria to 20 models, the authors selected 11 for analysis using the following criteria: whether the programs had operated for a three year minimum and were effective for TAG students, they were feasible to use, used by multiple schools, had evidence of teacher developed lessons and curricula, training for teachers was available, teacher ratings were positive, quality design features were present, documented evidence available, curriculum materials were used,

considered a learning system, national standards were aligned as was the school curricula, and skills were developmental and appropriate for all TAG students (VanTassel-Baska & Brown, 2007). Concerned with the effectiveness of differentiation, Mogensen (2011) studied gifted mathematics students in first through ninth grades for a period of three years in homogeneously grouped classes. The researcher found characteristics of effective teaching practices across the grade levels along with multiple differentiation strategies teachers used.

Differentiation

Sisk (2009) stated that all too often the regular classroom teacher was on her own to provide the education for the gifted student without proper resources. Many of those teachers were told to differentiate for the student. However, the gifted student needed more than just differentiation of curriculum. They needed challenge and a deeper study into content topics. Rogers (2002) found that regrouping for instruction in high group classrooms had substantial effects for academic achievement just as performance grouping (daily options that are by subject) had substantial effects. Social and self-esteem however, were positive but small effects.

Reis and Boeve (2009) undertook a mixed methods study to explore how gifted students responded to a challenging curriculum. Their study explored the practice of using differentiation for the instruction of TAG students. Using the comparisons of case studies of some of their participants, they described the perceptions and experiences of the TAG students in the afterschool enrichment program as the qualitative piece. Reis and Boeve (2009) reported the pre- and post-test reading scores as the quantitative portion of their study.

Curriculum Differentiation Models

Usually seen in high schools, honors classes were offered to TAG students in content areas using advanced curriculum and instruction. Students were grouped by ability and the teachers were highly qualified in the content area. For the profoundly gifted students, school districts offered the self-contained model. Brulles and Winebrenner (2011) described this model as one for students who were working well beyond their peers on a deeper level of understanding and usually learning content and standards above their grade levels. Individual schools often supplemented with another model of instruction for additional TAG students enrolled in the school, especially students of other ethnicities or diverse socioeconomic status (Brulles & Winebrenner, 2011).

VanTassel-Baska's Integrated Curriculum Model (ICM) was designed and developed for TAG students based on 10 years of research. The results reported by VanTassel-Baska and Brown in 2007 stated the ICM comprised three dimensions of content advancement, higher order process skills and projects, and deeper understandings within content. Comparisons were made of groups of gifted students who used the language arts, science, social studies, and mathematics curriculum units and gifted students who did not receive the treatment. The ICM model was being used in cluster, pull-out, and self-contained classrooms of TAG students (VanTassel-Baska & Brown, 2007).

An alternative reported by Olsezewski-Kubilius (2010) to the within school programs for gifted students were the specialty schools which focused on science, technology, engineering, and mathematics (STEM) content areas. Olszewski-Kubilius

reported on schools geared towards STEM subjects. Competition for admission was similar to the college admission process, and courses consisted mainly of advanced placement with acceleration as an option (Olszewski-Kubilius, 2010).

Response to Intervention

Bianco (2010) explored the possibilities of using a Response to Intervention (RtI) model as a tool for curing what was wrong with gifted education. As an advocate for gifted education, Bianco recognized the criticisms, underrepresentation of minorities identified for the gifted program, and the challenges facing gifted education. An unusual approach to gifted education was the idea of using RTI for gifted and talented students reported by Bianco. Bianco described the needs of the gifted student as unique as the ones of the student with special needs. She called for developing the giftedness in the TAG student by strengthening the RtI process by using challenging activities which would motivate and would respond to the needs of the gifted learner (Bianco, 2010). Additionally, Rollins, Mursky, Shah-Coltrane, and Johnsen (2009) reported a number of models of RtI used across the United States to meet the needs of the TAG student. Rollins reported on the Problem-Solving Model which employed a curriculum which was varied and included several interventions. Progress monitoring occurred frequently as did collaboration between teachers. This approach was used often with districts' gifted curriculum. Using Science, Talents, Abilities to Recognize Students-Promoting Learning for Under-represented Students (U-STARS-PLUS) was described by Shah-Coltrane. This program focused on Kindergarten through third grade students and concentrated on early identification and nurturing of potential TAG students through the regular classroom using science standards. The three tiers in the program began with Tier I for the whole

classroom, Tier II for small groups of students who needed more differentiation, and Tier III for individual students who required individualized or intense services. Finally, Mursky described how the RtI program in Wisconsin was expanded to include gifted students within the special education program. Not only were students who were at risk receiving intervention, but TAG students were in order to maximize their potential for acceleration and higher achievement. As Wisconsin's philosophy changed their Response to Intervention was changed to Response to Intervention/Instruction. This program included real world performance tasks which encouraged students to identify problems and ideas, apply analytical skills based on their knowledge learned, and to provide support for their work. Designs of projects and instructional opportunities were made by students. Teachers were able to employ differentiated interventions such as compacting the curriculum, acceleration, enrichment, scaffolding, more practice and support. Other states were named with some of their RtI programs and different options such as Colorado's flexible grouping plan with pull-out programs for content area instruction, cluster classrooms, self-contained classrooms, and grade acceleration. Common to each of the models described was the feature that explicit and differentiated instruction is just as important to meet the needs of the TAG student as differentiation is for students with disabilities.

Bianco concluded:

> RTI holds promise for developing and nurturing gifted potential; however, there are significant challenges that must be addressed. The success of RTI as a process for identifying and developing gifted potential largely depends on the knowledge, skills, and dispositions of classroom teachers. (Bianco, 2010, p. 328)

Perceptions of Talented and Gifted Students in Cluster, Pull-out and Ability Groups

Winebrenner (2001) stated that being highly intelligent in school is not something that is held in high regard and caused low self-esteem amongst some TAG students. The perception the TAG students had was that they were seen as not smart if they had studied and worked hard. This perception led to TAG students working below their capabilities. The desire for peer approval also led to TAG students pretending to be less able than they were.

Most recently, Lee, Olszewski-Kubilius, and Thomson (2012) sought to understand gifted students' social skills and relationships with peers. The results showed students to be above average in their own assessments of social competence, peer relationships, and social acceptance (Lee et al., 2012).

Addressing the need for a longitudinal study of concerns about emotional and social problems affecting gifted students, Peterson and Lorimer (2011) completed their 5-year study using group discussion in an affective curriculum. Their focus was preventive in nature and sessions for these fifth through eighth graders involved the students' emotional and social concerns, interactions with their peers, teachers, and parents, and communication with each other in a safe environment. The fifth graders were found to have significant positive differences from their first year in the program through their last year than any other grade levels in the study. Those areas were: 1) the importance of social/emotional problems being addressed with an adult was as important as academics and 2) working in groups was important. Across the grade levels, working in groups, being able to talk to teachers, and believing TAG students had fewer problems than regular education students increased at a significant difference between the last three

years of the students' participation in the gifted program. Although changes in perceptions happened slowly, over time the small groups changed direction in perceptions from negative to positive and in the end valued the social/emotional development through the group work (Peterson & Lorimer, 2011).

Olszewski-Kubilius and Turner (2002) and Cornell, Delcourt, Goldberg, and Bland (Cornell, Delcourt, Goldberg, & Bland, 1995). found that a relationship existed between the self-concept of gifted students and their academic achievement. Academic scores in subjects were predicted using academic self-concept measures. Rudasill and Callahan (2008) found it was especially important for gifted students that teachers were able to tailor the instruction and offer differentiation of content for the students by using self-concept and perception measures in order to facilitate optimal growth. Trusty (1994) found amongst fourth grade gifted students that a significant relationship existed between academic achievement and self-esteem. Findings from the research also suggested perceptions of peer and teacher relationships affected academic achievement.

Perceptions of Talented and Gifted Students in Cluster Groups

Berlin's (2009) qualitative study included a sample of 66 sixth-eighth grade TAG students, balanced in gender, divided into two groups; gifted and highly gifted. This study used students enrolled during the school year in a gifted program at the school which students spent time in gifted homogeneous and heterogeneous regular education classes. Examined were attitudes towards being labeled gifted, an evaluation of students' perceptions of being labeled gifted, and determinations as to whether a variance in attitudes and perceptions dependent upon the level of students' giftedness existed. Each group received the same questionnaire and survey. The students ranked their positive and

negative perceptions about social interactions, assignments (homework and schoolwork), assumptions of teachers, and parental and others' expectations. Rated for negative aspects were assignments, pressure, assumptions, and expectations from parents and teachers. Positive ratings were given by the highly gifted for social interactions with their peers. Berlin explained this by saying:

> Because highly gifted students, by definition, are further from the norm than their moderately gifted counterparts, it may be that, through their gifted label, highly gifted students found a peer group, new friends and gifted students with whom they could interact (Berlin, 2009, p. 221).

Berlin concluded the integration of gifted programs with the regular classroom may decrease the perception of stereotyping of the gifted as a negative perception as compared to previous studies.

Generating discussions about the students' perceptions concerning current, in use programs along with using available research is one of the first steps towards implementation. Gentry and Keilty (2004) in a multiyear study of two cluster grouping programs in a number of schools examined perceptions of students. For 3 years they studied the trends for improvement in achievement, more students identified for the gifted program, staff development, and implementation of programs for the gifted. They concluded that staff development, specific teacher training for gifted education, parental and district support, and using research of best practices resulted in two effective programs (Gentry & Keilty, 2004).

Feldhusen and Saylor (1990) found that clustered TAG students' self-esteem was slightly lower after being clustered. This lower self-esteem was due in part to working

with others of like intellectual ability and knowledge. The TAG students discovered they were not the top of the class. Clustering enabled the TAG student to make realistic comparisons of their own abilities with others' who were similar in intellect and ability.

Perceptions of Talented and Gifted Students in Pull-out Programs

Vaughn, Feldhusen, and Asher (1991) conducted meta-analyses on pull-out programs for gifted students. In their analysis and research they used studies which included control groups of gifted students in pull-out, clustered grouped, full-time gifted classes, and gifted students in no programs. Self-concept, creative thinking, critical thinking, and achievement were the four variables which were considered for the study. Included in their review and research were studies from 1959 through 1989. The meta-analysis included students from first through ninth grades. A number of different instruments were used in the studies such as the Torrance Test of Creative Thinking, Piers-Harris Children's Self Concept Scale, Wallach-Kogan Creativity Instrument, Ross Test of Higher Cognitive Processes, Cornell Test of Critical Thinking, California Test of Basic Skills, and The Me Scale used for self-concept. No clear indication was made that the students' self-concept was affected by the pull-out program. The authors reported the pull-out program did "not appear to have a negative effect" (Vaughn et al., 1991, p. 97). However, the other variables, creative and critical thinking and achievement were reported as having small and medium positive effects for gifted students in pull-out programs. Borland (2005) raised questions about the validity and whether the study could be replicated because only nine studies were examined along with outcomes of multiple variables.

Bate, Clark, and Riley (2012) used a qualitative method to study the perceptions of gifted adults who had participated in the Gifted Kids - a program in New Zealand comprised of a 1 day a week pull-out model for gifted students during their academic careers. The Gifted Kids program involved providing interactions among other gifted students for the exploration of their talents, enriching their academics, accelerating their learning, and understanding and developing their social skills. The researchers concluded that Gifted Kids used a withdrawal (pull-out) program, provided a differentiated curriculum which included "acceleration, complexity, depth, challenge, and creativity" (Bate et al., p. 26).

Dispelling myths about grouping TAG students together, Fiedler et al. (2002) reported heterogeneous grouped classes with one or two TAG students in the classroom produced negative feelings the students had about themselves as a result of being the sole different student in the class. Students reported they were left to provide all the answers for activities and lessons. Other students capable of grade level work in the class tended to judge themselves less able and competent of their actual abilities when confronted with the TAG students who were seen to provide all the answers.

In contrast, there were differences in students' perceptions for some of the programs when students were asked by Brulles and Winebrenner (2011). The disadvantages for the TAG students enrolled in pull-out programs and honors classes were that their giftedness was not acknowledged or taught all day except in the pull-out or honors class. Brulles and Winebrenner (2011) found the regular classroom teacher often did not offer challenging instruction in other content areas when the student was in their classroom because the students were not seen as gifted in multiple areas, but only in

the one area in which they were being served. TAG students enjoyed honors classes for both academic and social reasons according to teachers and parents (Brulles & Winebrenner, 2011). Strengthening Brulles and Winebrenner's (2011) study, Australian elementary gifted students in three specialty schools were given open ended questions during interviews to gain their perceptions on receiving challenging lessons in a study conducted by Eddles-Hirsch, Vialle, Rogers, and McCormick (2010). The researchers found that the students' perceptions regarding challenging lessons and socialization were dependent upon the model of instruction they received (Eddles-Hirsch et al., 2010).

In a similar study, Delcourt et al. (2007) examined the effects of different types of grouping on gifted students. They investigated achievement, the effects on motivation, and self-concept of the students. Their study comprised pull-out and separate class programs, within-class groupings, and special schools. The authors concluded students placed in gifted models had higher achievement scores than those not in programs. No significant difference in students' self-concept amongst the programs was found, however students enrolled in special schools had the lowest level of motivation (Delcourt et al., 2007).

Perceptions of Talented and Gifted Students in Ability Groups

Interestingly, Speirs Neumeister, Williams, and Cross (2009) sought to identify themes leading to students' development of perfectionism. Even though the participants were high school gifted identified students their perspective on their academic life in their elementary years was enlightening. Two themes were noted in the high school students as influencing their perfectionism later in high school: 1) lack of challenge in early academic careers and expectations; unchallenging activities in early school and being

bored. The students created a challenge for themselves of striving for perfection and 2) success in early schooling required them to be perfect later on because parents and peers began to expect it in them.

Rogers (2002) found small positive gains for self-esteem, social, and academic achievement for the specific content area when like ability grouping was used with with-in class groupings. If a majority of the school year was spent in extension or critical thinking activities, academic achievement increased as well.

Similarily, Tirri and Nokelainen (2011) surveyed, interviewed, and asked 168 Finnish Academic Olympians about their perceptions as to whether their academic success was due to their giftedness alone or to hard work that led to high talent. The participants believed both ability and effort were important to their academic success. They placed effort slightly higher on the scale than ability. The failures the participants sustained, they considered due to ability slightly more than their effort. They conveyed to the researchers that their interest in science and mathematical thinking led to their careers in the sciences and the participants attributed their success to their individual interests also. The study ties into other studies that link with self-perception and academic achievement for TAG students. The authors stated, "Therefore, students' self-perceptions of their own abilities become a key factor in educating high-ability students" (Tirri & Nokelainen, 2011, p. 26).

Summary of Perceptions of Talented and Gifted Students

In addition to perceptions of the stakeholders, it is important to look at how programs affect gifted students. Figg, Rogers, McCormick, and Low (2012) conducted a quantitative study of 93 boys in Sydney, Australia. The boys in eighth, ninth, and tenth

grades were studied in regards to their self-perceptions of their academic abilities. The study was seeking to find if a relationship between gifted underachievers and gifted achievers in regards to their self-perceptions existed. Results from the study showed a significant difference in the gifted students' perceptions of themselves and their academic achievement or underachievement. The authors reported underachievers needed to be subdivided into selective consumers, those who are self-deprecating. Self-deprecating consumers want to achieve but do not believe they can and are not as smart as people believe.

Achievement Effects of Students in Cluster, Pull-out, and Ability Groups

Gentry (2006) wrote in an article about the effects of No Child Left Behind (NCLB) that because of the legislation, schools had dropped programs for the gifted in order to fund programs for the low achieving student to gain mastery of grade level standards. Efforts to provide an equal education for all, raising test scores for all students at the same time caused more instructional time to be spent on rote and remedial skills rather than higher order thinking skills with high interest for students. Remediation became the emphasis of education without regard to providing students with gifted abilities the opportunity to realize their potential and exceed. Amrein and Berliner (2002) reported states using high-stakes testing for graduation such as the American College Testing, Scholastic Aptitude Test, and Advanced Placement scores were found to decline in achievement due to schools focusing on test standards and not creating meaningful student learning.

Lewis, Cruzeiro, and Hall (2007) found in their qualitative study of two elementary principals it was very important for the school's leaders to analyze the data

from the gifted program along with their analyses of other school programs' data. Gifted programs needed to set goals which could be measured to determine if the goals were met. Not knowing whether achievement had been met hindered a program and made it harder to make changes in programs and improve achievement. Teachers within the schools needed to be cognizant of the instructional skills TAG students required and have the training in order to appropriately provide instruction to the students. Clark (2002) said that the more talent or intellectual ability a child has over his peers, the more time he is sitting in a classroom without learning from instruction targeted to the regular education student. Clark added that gifted children may be able to learn by themselves but first they are children and need guidance and training just like other students. Lewis et al. (2007) said developing gifted program without an aura of elitism and with quality required support of the entire education and business communities.

Achievement of Talented and Gifted Students in Cluster Grouping

Swiatek (2001) stated gifted students clustered with others of similar ability achieved more than students who were grouped with a more mixed ability group of children. Gifted students who were clustered with others in mixed ability classrooms were able to outperform other gifted students spread throughout mixed ability classes by 1 month over the course of a year (Swiatek, 2001). Those students who were not only grouped with others of like ability but were provided material which was advanced, outperformed gifted students who were placed in mixed ability classrooms by 4 to 5 months over an academic year.

Rogers (2007) updated her research synthesis on gifted provisions and found that achievement for students in cluster grouped classrooms had an effect size of .62 whereas

regrouping for specific instruction had an effect size of .34. The cluster grouping involved the top five to eight students in the grade level clustered in one classroom of mixed ability children and with a teacher who wanted to work with them. Her synthesis clearly showed cluster grouping had very large positive achievement effects in gifted studies. She listed five guidelines for serving gifted and talented students. Two of those guidelines included:

1. Students who are gifted should spend the majority of the school day with others of similar abilities. Marked achievement in academic gain across all the subject areas and attitude increase was noted when these students were grouped.
2. Cluster grouping with one-third of the class members being gifted or talented with a trained teacher to provide learning experiences for the cluster group. When students were clustered, a sizeable gain of academic achievement was made across all academic areas. However, the classroom cluster teacher must be motivated and trained, the other students of mixed ability should not be difficult students which would require the teacher to focus more on them, and the curriculum needs to be differentiated appropriately or the gain will not be as large (Rogers, 2007, p. 389).

Winebrenner (2001) reported on Gentry's (1999) study which reported measurable positive outcomes of clustering gifted students. Clustered students enjoyed the consistent interaction with their intellectual peers. Teachers' time and effort were more efficient because differentiation for more than one or two students was possible. Positive role models were still available in all the classrooms and new academic leaders

emerged from classrooms not clustered. All staff, not just clustered teachers benefited from instructional strategies and differentiation workshops. Cluster grouping provided a full time gifted program for every student. Gentry (1999) also found that the students' achievement class-wide increased amongst the students participating in the school cluster group program.

Additionally, Rogers (2002) reported sizeable gains in all academic areas using the cluster model because the cluster teacher was able to spend a proportionate amount of instructional time and curriculum development with the gifted students in the model rather than the teachers who only had one or two gifted students.

Supporting the benefits of cluster grouping, Bailey et al., (2012) undertook a synthesis of 101 full text papers from the USA, UK, Australia, Israel, and New Zealand. Fifteen studies of school students 5-16 years ranging from 1988-2007 were used in the in-depth systematic review. The researchers investigated interventions for gifted and talented students to improve their academic achievement. They found support for social interaction as a strategy for teaching gifted students. Students should also be provided high challenging learning experiences every day with some independent learning. In summary they said, "There seems to be a common divide in educational research between evidence produced and sourced by teachers on 'what works' and evidence that is considered methodologically sound but does not include practical recommendations for the classroom in its conclusion" (Bailey et al., 2012, p. 44).

Rogers (2007) conducted a synthesis of the research concerning educating TAG students. The synthesis was done to enable a school district facing a restructuring of their gifted program to develop a program based on best practices. The district had been

using a pull-out program and had received a poor evaluation of the pull-out program and its effects on their TAG students. The team conducting the research looked at hundreds of research studies and literature articles. At the end of the study they devised five lessons they learned about best practices for TAG students (see summary Table 2). Lesson 1 was that the TAG students needed to be taught on a daily basis in the area of their identified talent. The suggested methods were clustering, cooperative groups, regrouping for instruction, and independent learning projects in order to foster academic achievement. Lesson 2 concerned the availability and planning of independent learning opportunities. Typically, TAG students had a preference for independent study and when given the opportunity to work alone achievement gains were made. Compacting the content, enrichment, acceleration, and independent studies were ways listed that TAG students could benefit from individualized instruction. Subject-based and grade-based acceleration needed to be provided to TAG students if so needed was Lesson 3. There were many options for acceleration available for TAG students. To name a few: grade skipping, cross grade enrollment, early enrollment, advanced placement, and dual enrollment. As regards to elementary students, early entry to Kindergarten, cross-grade for specific content areas, acceleration with subjects and grades, and compacting subjects were all options considered. Lesson 4 learned was to provide the TAG students opportunities to work and socialize with peers of similar intellect. Recommended were the full-time options of grouping such as magnet schools, self-contained classrooms, cluster grouping, with-in and between-class groupings for specific content and skill instruction, and extended, but consistent time for differentiation of the curriculum in a resource room. Results of studies showed cluster grouping at the elementary level of

three-fifths to one year of academic growth along with positive gains for social effects and self-esteem. Significant growth was made by students in with-in class groupings, mixed ability groupings, and high achievers groupings as long as systematic differentiation of the curriculum was undertaken. Lesson 5 established the need for instruction that was differentiated for pacing, practicing, reviewing, and taught in ways TAG students learned best. These included a much faster pace of the lesson, less practice and review, and teaching from a whole-to-part concept.

Table 2

Summary of Rogers (2007) Synthesis of Best Practices for TAG students

Lesson	Best Practices	Methods	Effects
1	Daily instruction in identified talent area	Clustering, cooperative groups, regroup for instruction independent learning projects	Foster academic achievement
2	Independent study	Content compacting, enrichment, acceleration, independent study	Achievement gains
3	Acceleration (subject based and grade based)	Grade skipping, cross grade enrollment, early enrollment advanced placement, dual enrollment, cross-grade for content, compacting	Individualized plan for achievement
4	Work and socialize with intellectual peers	Magnet schools, self-contained classes, cluster grouping, with-in and between class groupings for content and skill instruction, differentiation instruction in resource consistently	Three-fifths to one year of academic growth; positive gains for social and self-esteem effects using cluster grouping; growth was significant for groupings with-in class when curriculum differentiation was applied
5	Instructional differentiation specific for TAG learners	Faster pacing, less practice and review, teaching whole-to-part	Achievement gains

Brulles, Saunders, and Cohn (2010) reported their study which compared students in a large district in the southwest which had used cluster grouping for a number

of years. The large participant numbers of students in cluster classrooms contrasted to those not enrolled in cluster classrooms provided a unique opportunity to compare achievement. Results showed students in cluster classrooms scored significantly higher in academic achievement than those not enrolled in cluster classrooms. Brulles et al. (2010) attributed the increases to attributes such as differentiated curriculum, teachers trained to teach TAG students, and learning with others of similar abilities.

The NAGC (2009) recommends that fulltime options should be employed because they are cost effective for personnel and resources and allow TAG students to work with their peers at a social and intellectual level similar to theirs. VanTassle-Baska and Stambaugh (2006) added that modified and replaced curriculum occurred more often when TAG students were clustered in one classroom. Modified curriculum led to achievement gains increasing when grouping occurred.

Borland (2013) said TAG students spend most amount of their school day in the heterogeneous regular classroom and because of that their lessons there should be differentiated for an "excellent education" (Borland, 2013, p. 73). Rogers (2007) in her synthesis summarized, "…the evidence is clear that powerful academic effects and small to moderate affective effects are produced when gifted children are grouped with like-ability or like-performing peers and exposed to differentiated learning tasks and expectations" (Rogers, 2007, p. 389).

Morgan (2007) examined a cluster model implemented in the UK which was based on the three theoretical models of Bloom's taxonomy, Gardner's MI, and Renzulli's Triad. She studied the effects and perceptions of the students and found that

the results were positive for impact on academics, social and emotional development, peer relationships, and instructional strategies (Morgan, 2007).

In her 3 year study examining the effects of a cluster grouping program on the achievement and identification of students, Gentry (1996), concluded three major benefits to cluster grouping were observed. The first benefit was the interaction with intellectual and age peers. Second, there was no additional cost for the school or district to group the students into a cluster group. Third, she found that cluster grouping facilitates ongoing programming in the regular classroom for gifted students. Additionally, she found that achievement increased significantly when compared to other gifted students not in a cluster group. More students from other classrooms, who were not previously identified as high achievers, were identified. Some of the remaining students in non-cluster classes emerged as high achievers when the high achievers were removed and placed into the cluster group. The cluster grouping had a positive effect on all students' achievement and identification.

Brulles and Winebrenner (2011) described the self-contained model as one which was limited because it most often only served TAG students who were considered high achievers and gifted students. However, for these particular students, the self-contained classroom was seen as vital for their growth academically. They also reported that when TAG students were learning throughout the day in a cluster group model that their achievement increased. Noted was that gifted students were typically regrouped by ability into the content classes for reading and mathematics honors classes (Brulles & Winebrenner, 2011). Page and Keith (1996) also found that classrooms which were

homogeneously grouped according to ability had a small positive effect on academic achievement. They were unable to find any negative effects.

Achievement of Talented and Gifted Students in Pull-out Programs

The least useful and successful model, although the most commonly used model was the pull-out program said Johnson (2005). The pull-out option was not a good use of resources in terms of personnel and the influence on students' achievement was ineffective. He stated that finding ways to differentiate within the classroom was much more effective for personnel, cost, and impact on students' achievement. Borland (2005) was amazed that the most widespread option for educating gifted children, the pull-out option, had almost no support to declare it to be an effective program.

Saudi Arabian elementary schools used a pull-out model for their gifted education delivery. Aljughaiman and Ayoub (2012) investigated the effects of a 6 week unit on fifth and sixth graders. The Saudi Arabian schools maintained their program for TAG students focused on thinking, research, learning, and affective skills. The study was designed to discover whether there was a relationship between what students learned and the application of their learning to real world problems. Forty-two identified gifted students were split into either the control or experimental group. They were administered the Aurora Battery which was an assessment used to measure not only general intelligence but analytical, creative, and practical abilities which was the focus of the study. The experimental group participated in three units which consisted of a theme which was problem-based with research, choice of project, data collection, project design, and final presentation elements. During the phases of the units the students were taught skills such as creative and critical thinking, research, social, personal, comparing,

contrasting, identification of sources, problems, and teamwork. The students were pulled from their regular courses for a few hours each day for the 6 weeks. The indications from the results were that the program increased the students' creative and analytical abilities. However, there were no differences for practical abilities or the combination of the three abilities between the two groups. They concluded that although pull-out programs typically provide students opportunities to use cognitive thinking skills, the lessons do not provide opportunities for the students to learn and improve their analytical skills. There was also a positive effect on the students' creative skills. In agreement with VanTassel-Baska (2006), the study indicated that when metacognitive lessons are taught, they need to include real world applications or problem-based activities which have meaning for the students instead of being taught as skills in isolation. Although the study did not expand on the differences between pull-out programs in the U.S. and Saudi Arabia, it is important to note that in the U.S. public schools' gifted students in a pull-out program attend the resource room for much shorter periods of time and do not seem to take advantage of opportunities for in-depth studies.

Azano et al. (2011) explored teachers' beliefs and expectations in a mixed methods design to determine whether academic achievement was affected. A research based curriculum in reading was given to 55 teachers to use in their third grade gifted students' classes. There were 740 students from 10 states and multiple settings including rural, urban, and suburban schools. The gifted students were enrolled in pull-out and self-contained classrooms. The control group used for comparisons consisted of 32 classrooms with 520 students. Teachers were grouped into three groups depending on whether they had followed the curriculum as written, changed it a little, or revamped it

completely. Interviews, observations, pre- and post-tests in reading, and the Iowa Tests of Basic Skills Reading subtest were used as data. Studied were the factors of time, autonomy, expectations, and expertise and how the teachers used these while they taught the reading curriculum. The results of the study indicated that teachers who were totally invested in the curriculum, had high expectations of their students, and implemented the curriculum with the least amount of barriers had students with higher achievement scores than the comparison group and the teachers who did not follow the curriculum, were unable to surmount barriers, or had low expectations of themselves or their students.

In earlier research by Gentry, Rizza, and Owen (2002), they found gifted elementary and middle school students enrolled in regular schools did not perceive the activities teachers said were challenging as challenging. In contrast, students enrolled in magnet schools reported their activities were more challenging than their peers. Attitudes of elementary and middle school gifted students in rural, urban, and suburban settings were studied by Gentry, Rizza, and Gable (2002) on four different dimensions (interest, challenge, choice, and enjoyment). Elementary students in a rural setting reported enjoying their classes much more than the other students but claimed they had less challenging activities. There were no significant differences among the middle school students (Gentry, Rizza, & Owen, 2002 and Gentry, Rizza, & Gable, 2002).

Shields (2002) compared the attitudes and perceptions of fifth and eighth grade gifted students enrolled in homogeneous and heterogeneous classes. He found the fifth graders in the homogeneous class scored higher than the ones in the heterogeneous class. For the eighth graders there was no significant difference. Both grade levels in the

homogeneous classes indicated a higher career interest and the TAG students in the heterogeneous classes claimed more self-confidence in their academics (Shields, 2002).

Do the activities and lessons planned by teachers have an impact on learning for the TAG student? Caraisco (2007) was a principal of an elementary school who noticed students in a fourth grade TAG self-contained class seemed bored and scores were not showing growth but declining as age increased. A study was conducted to discover TAG students' learning styles and lessons were created to involve choice, flexibility, and challenge for the students. The results were compared with students taught the same concepts through traditional methods. Contract Activity Packages (CAP) method showed improvement in gains, test scores, and attitudes with CAPs. Eddles-Hirsch et al. (2010) reported students' perceptions of the challenging activities they were exposed to throughout the school day. However, the researchers offered no quantitative data to support their findings. Morgan (2007) also investigated the perceptions of parents, teachers, and students in a cluster classroom of elementary students. Although her qualitative data were extensive, the study could have had more impact if quantitative data were included.

More recently, Yang et al. (2012) investigated the perceptions of gifted elementary students versus regular students across four elementary schools in South Korea. Their purpose was to ascertain the value of a pull-out program for gifted students. Two grade levels of students were surveyed with the *My Class Activities* (MCA) (Korean version) about the students' perceptions of the class activities within the regular classes after attending the pull-out gifted class. Non-identified gifted students in the regular classroom were also given the MCA to rate their perceptions. Interest, choice, challenge, and

enjoyment were measured. The findings showed no significant differences among the two groupings of students as the gifted students did not perceive their pull-out class activities any more or less challenging or interesting than their regular class activities.

What role does play have for TAG students? Beisser, Gillespie, and Thacker (2013) recently employed data collection instruments asking students for their concept of play and what types of play they enjoyed (board games, thinking games, physical play, and social play). This sequential mixed methods study involved 18 fifth and sixth grade TAG students from the Midwest in 3 groups of 6 for focus groups and 162 additional TAG students for an on-line survey. Being with a few friends was the highest ranked activity. Being with a large group was chosen least which confirmed research about introverted children preferring to be with small groups. School settings showed differences as did social and physical play for genders. Students gave their thoughts about play. Results showed students reported playing is an important part of the day and important for learning. Do teachers stereotype gifted students by not providing activities which incorporate play?

The effects of a gifted summer program on gifted students were studied by Dai, Rinn and Tan (2012) over a period of three summers. Gifted identified 11-16 year olds attending a residential summer camp were studied. The presence and prevalence of the big-fish-little-pond effect (BFLPE) was examined. The study identified group and individual difference variables that helped predict those who were more susceptible to BFLPE. Also studied was the self-concept stability in adolescents. Researchers found no pattern of decline in self-concept. They proposed the short length of the program (3 weeks) and the variety of classes the students took did not afford the students the time to

form a peer group for reference framing. The positive effects of the program may have outweighed the negative including the possibility of better curriculum and instruction during the summer program than through the regular school year.

Achievement of Talented and Gifted Students in Ability Groups

Studying the effects of differentiation and flexible grouping strategies, Tieso (2002) applied a 3-week curriculum treatment using differentiated activities and flexible grouping of students in a mathematics class. Students were grouped by ability based upon a pretest given by teachers. The teachers used above level assignments for students with higher ability and used different materials and scaffolding activities for those students with average and below average abilities. At the end of the treatment period Tieso (2002) concluded there was a moderate effect on achievement for the students. Although it was a short treatment time there did not seem to be any negative effect on students' self-concept.

Melser (1999) conducted a study of fourth grade students in the Midwest. There were 19 gifted student participants enrolled in four heterogeneous classrooms. Two classrooms of fourth graders were self-contained gifted classes. A pre- and post-test using the Gates-MacGinite Reading Test and the Coopersmith Self-Esteem Inventory were given. The treatment consisted of 10 weeks of a cooperative learning unit using a novel and activities. Reading achievement increased in both groups. The self-contained classrooms had a slightly higher achievement increase. However, on the self-esteem ratings, the TAG students in the heterogeneous classrooms had an increase in contrast to the TAG students in the homogeneous classrooms whose scores decreased. Suggested

from the results are for teachers to consider flexible grouping using both heterogeneous and homogeneous groups with cooperative learning activities in the classroom.

On-going longitudinal studies yielded results indicating positive findings for programs using the Stanley (Stanley et al., 1974) model of acceleration. Longitudinal studies of the Renzulli (Renzulli, 1977) model demonstrated that students scored as high or higher on standardized tests and showed positive effects for underserved students. The Schoolwide Enrichment Model (SEM) had been studied with upper elementary students in a Title I school and results indicated that not only gifted students benefited from the 12- week intervention, but students at all reading levels had scores which increased significantly on standardized tests (VanTassel-Baska & Brown, 2007).

Indications of significant growth for VanTassel-Baska's Integrated Curriculum Model (ICM) in all the content areas were made with students who received instruction using multiple units in core courses. Areas positively impacted were concept development and mastery, critical thinking, persuasive writing, literary analysis and interpretation, linguistic competency, and higher order process skills. Noted in their study was that as the engagement and motivation of the students and teachers with the curriculum increased, also greater gains in growth in achievement were made. The use of the ICM and SEM models were particular examples of programs which suggested this relationship (Van Tassel- Baska & Brown, 2007).

Tieso (2003) sought to enlighten the teaching profession on instructional and curricular practices with a review of the literature on grouping for teaching leading to student achievement. Her literature review included studies on whole class instruction, between-class grouping, cross-grade grouping, and within-class grouping or flexible

grouping. Tieso argued that outdated and flawed research on ability grouping had given ability grouping a bad name. She found that significant effects in achievement were made with flexible grouping and strategic teaching methods. Additionally, achievement was increased when teachers used a differentiated curriculum to meet the needs of the individual learner. Later, Tieso (2005) reported on the practice of educating the TAG student by using grouping practices such as flexible grouping within a class, grouping between classes, and whole class grouping. The flexible grouping led to remarkable results in achievement. In her study of effective grouping for gifted students, Tieso found that the grouping practices combined with some revision of the curriculum yielded significant results. Differentiating the curriculum to include more rigor and quality of assessments, instructional methods and strategies, and realigning the content were proven more effective.

Rubenstein, Siegle, Reis, McCoach, and Burton (2012) performed a mixed methods study to determine factors which could cause gifted middle school students to be underachievers. Additionally, they piloted Project Atlas after identifying the underachievers to see if the project was a solution to helping the students. Results of the first study indicated that making school more meaningful for the students might help the underachieving gifted students in middle school perform better academically. In regards to Project Atlas (Autonomous Thinkers Learning as Scholars), self-regulation showed a significant increase on the attitude instrument administered to the students in Project Atlas. Project Atlas teaches students how to make their classes relevant to them and thus more meaningful by helping them to design their own assignments. The goal valuation and environmental intervention groups showed the greatest gains.

Coon (2004) reported on a gifted model which served not only the gifted population, but the high achievers and the entire school population. The Trigram program model was a mix of heterogeneous and homogeneous groupings. The delivery was a mixture of enrichment, cluster, acceleration, and pull-out. The Trigram began as a solution to a middle school located in a rural/suburban area with the problem of having one gifted resource teacher. Attempting to provide services for all the TAG students, some of whom had learning disabilities, and the high achievers, the school developed a three level program to employ the best practices used in gifted education for all the students in the school. The belief that all students could learn and be taught critical thinking skills, problem solving, art appreciation, and social skills and benefit from the lessons was the driving force in the Trigram development. The Trigram model had three levels of instruction. One level was for the TAG students and was based on Renzulli's Triad Model (Renzulli, 1977). The students were pulled out and received services from the resource teacher using independent projects they designed. The second level was for high achievers and some TAG students with services rendered in an enrichment model. Their content classes were compacted into 4 days and on the fifth day they attended class with the gifted teacher for an extended period. The third level served the rest of the school students. The gifted teacher was scheduled to work with each core content class each 9 weeks. Students participated in academic games and competitions at their ability levels. Results found were that teachers, parents, and students rated the program positively. Students believed they had gained from the program because they all were in the gifted program. Academic achievement was found with many academic honors being awarded to the students and school.

Teacher Impact on Achievement

Azano et al. (2011) explored teachers' beliefs and expectations in a mixed methods design. A research based curriculum in reading was given to 55 teachers to use in their third grade gifted students' classes. Teachers were grouped into three groups depending on whether they followed the curriculum as written, changed it a little, or revamped it completely. Studied were the factors of time, autonomy, expectations, and expertise and how the teachers used these while teaching the intervention. Also explored was the degree of student achievement within these groups. The findings of the study were important for curriculum implementation. Although the curriculum employed best practices, the teachers' beliefs, and expectations of their students became the driving force behind the implementation of the curriculum. When it was appropriate to accelerate, enrich, or differentiate the lesson, the teachers' expectations of the students were the determining factor. Ultimately, the students' achievement was affected by the teachers' beliefs and expectations.

Hong, Greene, and Hartzell (2011) compared the characteristics of gifted and regular education teachers. Although there were similarities between the groups there was strong evidence that gifted teachers had a more positive impact on student achievement and learning. A striking difference between the two groups was regular education teachers stated they focused more on student testing whereas the gifted teachers' focus was on student learning (Hong et al., 2011).

Summary of Achievement of Talented and Gifted Students in Groups

French et al. (2011) used a mixed methods study consisting of surveys and interviews to determine students' preferences for instructional methods, perceptions of

their social skills and academics, and after-school activities. The authors' results indicated gifted students who were taught using constructivist pedagogy preferred working with other students. Those students taught using instructional methods which did not necessarily support purposeful student to student interactions (a more traditional approach), indicated a preference for doing their schoolwork alone. However, those students who indicated a desire to work alone in school chose to be with their peers in after school activities. By using open-ended questions the researchers discovered the gifted students had a willingness and desire to work with others in the classroom when they believed they received support from their peers and their teachers (French et al., 2011).

Focusing on the same areas as French et al. (2011), Riley and Moltzen (2011) conducted a participatory action research over a 3 year period in 315 schools. The study evaluated three programs for gifted and talented students in New Zealand. They used case studies, looked at student outcomes each year, redesigned programs during the time period, and conducted focus groups. At the end of the third year they made a determination as to the effectiveness of the programs. Their recommendation was that when programs were developed for TAG students that all the stakeholders participate in the process of designing the program or curriculum to be effective. Although this study's main focus was on program development, the students' perceptions and achievement were explored in the third year of the evaluation as the evaluators looked at curriculum differentiation for the students and allowing students to work with their peers.

Brighton and Wiley (2013) suggested that when a pull-out program was paced for the student and was rigorous, it was still not as effective without offering additional

services on a full-time basis. Programs they noted as more effective than pull-out were push-in, cluster, and differentiation within the regular classroom.

Instruments

Perception

The *Harter Self-Perception Profile for Children* (Harter, 2012) instrument was selected to assess the students' perceptions of themselves in multiple areas at the beginning of the data study and the end of the study as a pre/post measure. The results yielded data enabling the researcher to look for relationships between class groupings and changes of perceptions over time. The *Harter Self-Perception Profile for Children* was first designed in 1985 and revised in 2012. The survey used a multidimensional approach to provide students an opportunity to judge themselves across the different areas of their lives. The specific version of the instrument was designed for students ages 8-15 or the upper elementary and middle school students. The differentiation of the instrument lies in the domains being different, number of questions, and content differences (see Appendix C). How people assess themselves differently at different stages of their lives was the approach Harter had used to restructure the instrument. With-in developmental psychology, the terms self-perception and self-concept were often used interchangeably. The importance of self-perception as a paradigm when discussing learning outcomes needed to be considered. Taking under consideration then, is how one evaluates personal skills and characteristics of one's self (Harter, 2012).

The *Harter Self-Perception Profile for Children* was a self-reporting inventory with six scale items for students to rate themselves on their perceptions (see Table 3) of their Scholastic Competence (SC), Social Competence (SoCo), Athletic Competence

(AC), Physical Appearance (PA), Behavioral Conduct (BC), and Global Self-Worth (GSW). The particular subscale of self-concept was comprised of five of the scales: Scholastic Competence, Social Competence, Athletic Competence, Physical Appearance, and Behavioral Conduct. The Global Self-Worth subscale was more representative of a general concept or how a student likes himself overall (Harter, 2012; Meijer, Egberink, Emons, & Sijtsma, 2008).

Table 3

Contents by Domain

Domain	Contents
Scholastic Competence	School work competence; solving problems, finishing work, how well did one do
Social Competence (revised from Social Acceptance domain in original version)	Social success; making friends and keeping them, being accepted, how to be popular
Athletic Competence	Able to do well at sports and games
Physical Appearance	Happiness with one's appearance; good looking
Behavioral Conduct	Does one like one's conduct; act properly, do the right thing, avoid trouble
Global Self-Worth (separate subscale from above) *This is a separate score, not a total of the first five domains.	General perception of self; does one like one's self, leading one's life the way one wants to lead it

Note. Adapted from *Harter Self-Perception Profile for Children* Manual (2012).

This instrument was used by many developmental social psychologists. It provided quantitative data for changes in perceptions. The *Harter Self-Perception Profile for Children* was intended for the students to judge how they function in the specific domain. The test has 36 items with six questions for each domain. Unique to this instrument was the format of the questions. Harter (2012) designed the format in a "structured alternative format" (p. 4) in order to give students a range of choices which

were considered desirable. For example, on the left side of the question the students have two boxes they can check: “Really true for me” or “Sort of true for me.” They are then presented with a statement: “Some kids often *forget* what they learn BUT Other kids can remember things *easily*.” Then two more check boxes are presented “Sort of true for me” and “Really true for me” (p. 4). Harter explained that this format allowed the students to decide what type of child they are most like and then how close they resemble that group. This format eliminated socially anticipated answers and encouraged honesty when answering the questions. A sample of the question format is shown in Figure 4.

	Really true for me	Sort of true for me				Sort of true for me	Really true for me
12.	☐	☐	Some kids don't like the way they are leading their life	BUT	Other kids do like the way they are leading their life	☐	☐
13.	☐	☐	Some kids are pretty slow in finishing their school work	BUT	Other kids can do their school work quickly	☐	☐
14.	☐	☐	Some kids don't have the social skills to make friends	BUT	Other kids do have the social skills to make friends	☐	☐
15.	☐	☐	Some kids think they could do well at just about any new sports activity that they haven't tried before	BUT	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐
16.	☐	☐	Some kids wish their body was different	BUT	Other kids like their body the way it is	☐	☐
17.	☐	☐	Some kids usually act the way they know they are supposed to	BUT	Other kids often don't act the way they are supposed to	☐	☐

Figure 4. Sample of questions on the *Harter Self-Perception Profile for Children* (Harter, 2012).

Muris, Meesters, and Fijen (2003) provided evidence for reliability and validity of the instrument. They used a large sample ($N = 1146$) size to lend credibility to this complete assessment of the *Harter Self-Perception Profile for Children*. The study investigated the validity of the instrument by testing it with other similar instruments such as the Trait Anxiety Scale of the State-Trait Anxiety Inventory for Children, the Spence Children's Anxiety Scale, and the Child Behavior Checklist and the instrument was found to have produced consistent results and to have good validity.

Granleese and Joseph (1994) investigated the reliability of the subscales over a three year period for 24 children. Highly correlated was the reliability of the Global Self-Worth subscale. Over time, this reliability did not change. The two best predictors of Global Self-Worth were physical appearance and social acceptance domains at eight years. At age 11 the domains of physical appearance and scholastic competence were predictors for Global Self-Worth. However, Granleese and Joseph used the 1985 version in their study, and Harter revised the instrument in 2012. Harter (2012) cautioned researchers not to use test-retest as a measure of reliability because children's self-perceptions change due to many types of interventions at school, home, or in the world and the results could be problematic.

Egberink and Meijer (2011) assessed the measurement of knowledge, abilities, attitudes, and personality traits of the measures by using the item response theory model. Their goal was to determine whether the concept was in fact actually being measured by the question item and whether the measures reliably could classify people across different standards of the underlying attribute measures. Surveyed were 611 elementary students. The authors found that although some measures contained items which were replicated, children interpreted them differently. They also related that although some characteristics could have been determined in three or four questions, the number of items on the measures would have been too small and additional item questions were desirable. A recommendation that some scales needed to be revised such as Athletic Competence, because they were too broad in nature, and researchers were not able to discern differences between students with high concept and ones in the middle to high range was included in the study. Egberink and Meijer (2011) claimed that in their findings Global

Self-Worth and Physical Appearance did in fact measure the same ideas, which was a difference from earlier studies' findings. Both the subscales measured self-concept and were more scales about appearance. Harter (2012) defends her changes to the instrument defining the differences in the subscales and stating "These two categories of self-evaluations can happily coexist. Thus, in addition to subscales tapping domain-specific self-concepts, our instrument contains a separate subscale entitled Global Self-Worth, namely, how much one likes oneself as a person, overall" (Harter, 2011, p. 2). Egberink's and Meijer's final determination was that combining the use of observations, interviews, tests, and measures such as the *Harter Self-Perception Profile for Children* resulted in acceptable reliability and validity.

Meijer, Egberink, Emons, and Sijtsma (2008) evaluated the 1985 Dutch version of the *Harter Self-Perception Profile for Children* using person fit statistics on an Item Response Theory model to detect the validity of individual children's test scores. Using a sample of 611 children aged 8-12 years old the authors sought to detect any differences in ages and gender by comparing the fit of the model between males and females and young children (8-9 years) and old children (10-12 years). Three general patterns emerged from their study: 1) students might not have understood how to fill out the questionnaire; 2) students did not understand the meaning of the question due to low cognitive ability; and 3) students had a low self-concept. Their recommendation was for evaluators to combine other sources such as interviews or observations to help interpret children's responses.

Academic Achievement

The Criterion Referenced Competency Tests (CRCT) was utilized to measure and compare academic achievement. All students in third, fourth, and fifth grades in Georgia schools take the CRCT as mandated by the *A+ Education Reform Act of 2000* (Georgia House Bill 1187, 2000). These students are assessed in the content areas of language arts, reading, mathematics, social studies and science. In the spring of 2000, the CRCT was implemented in the content areas of reading, language arts, and mathematics. Assessments in the social studies and science content areas were implemented in 2002. The CRCT was designed to measure how well students have acquired the skills, concepts, and knowledge based upon the Common Core Georgia Performance Standards. The CRCT is used to gauge the quality of education amongst Georgia's students (Georgia Department of Education, 2013). This test was chosen for two reasons: 1) The data were readily available, and 2) this was the only state mandated test for elementary students.

Conclusion

In conclusion, Adelson, McCoach, and Gavin (2012) found more research was needed to find and develop best practices for the gifted learner for implementation in schools (Adelson, McCoach, & Gavin, 2012). When schools made decisions to determine the best education for the gifted and talented identified students, they needed to consider further research by asking the students their preferences for learning reported (French et al., 2011). Asking these students whether they liked to work with others or if they felt alone in school would yield helpful information for curriculum and instruction. Changes to the education of gifted learners and teachers of the gifted, including their textbooks were also needed according to the researchers (French et al., 2011). VanTassel-

Baska (2006) may have said it best, “Quality education for gifted students is a right, not a privilege” (VanTassel-Baska, 2006, p. 8).

Chapter III

METHODOLOGY

To have quality programs for the gifted students empirical research must show a direct relationship of gains in achievement with the use of the program (VanTassel-Baska, 2006). Budget cuts, wavering perceptions of interested parties and the public, and reduced personnel and resources will continue if the effects of programs are not shown to have a positive impact on students.

Previous studies have reported differences in academic achievement among students instructed in one or other of the instructional models, however few studies reported the perceptions of the talented and gifted student as related to their education (Shields, 2002; Yang et al., 2012). Other studies have made their focus the self-concept of the student and compared other affective outcomes of the gifted and non-gifted students (Dai et al., 2012; Delcourt et al., 2007; Shields, 2002; Tieso, 2002; Vaughn et al., 1991). Models of instruction such as pull-out, self-contained, magnet schools, and other class groupings have been studied and compared (Delcourt et al., 2007). Although there were ample studies on differentiated learning of special needs students, the focus on Talented and Gifted (TAG) students was limited (Dai & Chen, 2013; Moon, 2009; & VanTassel-Baska, 2006). Gifted programming has been dissected for determining the best instructional model. A disparity existed among states, within states, and within districts as to the services provided and even the identification of the gifted population. With federal and state monies at stake, programs have been studied to identify the effects

of gifted programming on the schools' overall academic achievement, student achievement, and some behavioral outcomes (Adelson et al., 2012).

Purpose

The purpose of the current study was to explore perceptions and achievement of the elementary TAG students' experiences who were enrolled in cluster grouped and pull-out classrooms. Very few studies have considered the effects of clustering TAG students throughout the day within the regular classroom for the different academic courses. The availability of current research within the last decade was limited and indicated a need for more study of educating the TAG elementary student.

The study herein specifically focused on the students' perceptions and achievement to their grouping and delivery model. The purpose of this study was to examine the perceptions, attitudes, and beliefs of gifted students in addition to their achievement. Furthermore, the changes in perceptions of the students enrolled in cluster and pull-out classes were explored. This study examined the possible differences between self-esteem perceptions, academic achievement, and the program model (pull-out versus cluster).

Research Questions

1) Were there significant differences in the global self-worth (GSW) perception or the sub-scales of self-concept perception (SC = Scholastic Competence; SoCo = Social Competence; AC = Athletic Competence; PA = Physical Appearance; and BC = Behavioral Conduct) of gifted elementary students in cluster versus pull-out classrooms as measured using the *Harter Self-Perception Profile for Children*?

2) Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using an on-line structured interview with open-ended questions? (Appendix A)

3) Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using focus groups formed from six students at each grade level? (Appendix B)

4) Were there significant differences in achievement levels of gifted elementary students in pull-out versus cluster using the Criterion Referenced Competency Tests (CRCT) total scores in reading, language arts, mathematics, science, and social studies content areas?

Participants

The voluntary participant sample ($N = 59$) for this study was drawn from two rural Southeastern public elementary schools in the United States. Both schools served Pre-Kindergarten (Pre-K) – fifth grade students. Convenience sampling was used in the selection of schools. The researcher taught at one school and the other school was readily assessable. School A was a Pre-K through fifth grade elementary school. Enrollment at the school was 760 students with 22 TAG students in third-fifth grades. The school district with School A had seven elementary schools, three middle schools, one high school and 10,113 students enrolled. Of the 22 participants at School A, 88% were parent-identified as Caucasian, 4% were parent-identified as African American, and 8% were parent-identified as other. There were a total of 11 males (50%) and 11 females (50%). School A's TAG students were served in a pull-out model with the gifted resource teacher. They attended gifted class for one segment each day and received instruction in

the science content area. School B served four communities. The district had one primary school (Pre-K through third grade), one elementary school (fourth-fifth), one middle school, and one high school. School B was a fourth and fifth grade school with a primary school (K-3) nearby. Enrollment in School B was 700 students. The total of TAG students (third-fifth) was 37 at School B. Of the 37 participants at School B, 81% were parent-identified as Caucasian, 16% were parent-identified as African American, and 3% were parent-identified as other. There were a total of 15 males (41%) and 22 females (59%). They were clustered in their respective grades with a gifted certified teacher for the school day and received enrichment from the gifted resource teacher once a week for the entire day.

Purposive sampling was used for the selection of volunteer participants who were those students identified as gifted and talented through the State Board of Education and enrolled in the gifted program. Jones and Kottler (2006) defined purposive sampling as easy to use and usually chosen because the researcher is aware of the comparisons of the participants to the target population. Students identified for the Gifted and Talented program in the state in which the study took place, must qualify using the criteria established by the state (2014). Option A requires a student to qualify with a mental ability score and an achievement score with the following:

1. Score 99th percentile composite score on a nationally age normed mental ability test (Grades K-2) OR Score 96th percentile or above composite score on a nationally age normed mental ability test (Grades 3-12)
2. Score 90th percentile or above on Total Reading, Total Math, or Complete Battery on a nationally normed achievement test

3. Creativity and Motivation evaluation data are required

Under Option B, students must qualify in three out of four areas:

1. Composite score in the 96th percentile or above on a standardized, nationally normed mental ability test; OR 96th percentile on a component score on a nationally age normed mental ability test
2. Score in the 90th percentile or above in Total Reading, Total Mathematics, or composite score on a standardized, nationally normed achievement test; Superior product/performance with a 90 or above (scale of 1-100 and evaluated by a panel of three or more qualified evaluators)
3. Score in the 90th percentile or above on a nationally normed creativity assessment; Superior product/performance with a 90 or above (scale of 1-100, equate to 90th percentile, and evaluated by a panel of three or more qualified evaluators)
4. Score in the 90th percentile or above on a motivational assessment; Superior product/performance with a 90 or above (scale of 1-100, equate to 90th percentile, and evaluated by a panel of three or more qualified evaluators) (Georgia Department of Education, 2013)

The students used in the sample were third, fourth, and fifth graders. Younger students were not a part of the sample because the *Harter Self-Perception Profile for Children* was not intended for use with students younger than third grade and another version would have had to be used. Random sampling was employed when choosing students for the interviews and focus groups. Focus groups work better with a smaller number of students (6-10) and because of the age of the students participating in this

study, a representative group was more appropriate to select (Patton, 2002). School and district administrators granted access to this researcher to meet with the students throughout the course of the school year for research purposes.

Research Design

The independent variables of the study were the program options of pull-out and cluster of the third, fourth, and fifth grade groups. The dependent variables were the total content scores [mathematics, reading, language arts (ELA), science, and social studies] on the CRCT to measure achievement and the mean scores of the subscales on the *Harter Self-Perception Profile for Children* to measure perception for each grade. The study sought to discover whether the effects in the achievement scores and perception subscales (dependent variables) of the two groups (independent variables) differed. A mixed methods approach was appropriate for the study. Creswell and Plano Clark (2011) discussed that although the mixed methods approach has been used for some 50 years, only within the last 25 years has this research design evolved and become an alternate research design. During that time there have been changes in the definition of mixed methods. The changes included methodology, philosophy, research design, data collection, and purpose. Creswell and Plano Clark (2011) traced the evolution of the changes from separated quantitative and qualitative methods and then mixing the two in the early years, through mixing all aspects of the design creating a new approach, to the most recent definition of mixed methods approach with the incorporation of six essential elements in the approach.

These six elements are:

1) collect and analyze quantitative and qualitative data;

2) mix or combine the data either sequentially, concurrently, or embedding;

3) prioritize the data;

4) conduct a single study;

5) provide a framework within a theoretical lens or philosophical worldview;

6) design a plan to conduct the study (Creswell & Plano Clark, 2011).

This design was more suited to be used to provide a better understanding of the qualitative and quantitative data collected for the research questions. The design of this study most closely resembled the description of an Explanatory design (Creswell & Plano Clark, 2011). In Explanatory designs, the researcher's philosophy shifts from a postpositivist (verifying a theory) to a constructivist (makes sense of the participants' experiences) orientation (Creswell, 2009; Creswell & Plano Clark, 2011; Patton, 2002; Seidman, 2006). Similarly, this study used interviews and focus groups to tie the quantitative and qualitative strands together. With an Explanatory design, the qualitative strand follows the quantitative strand and helps to inform the qualitative strand's questions and topics. Administering the *Harter Self-Perception Profile for Children* (Harter, 2012) at the beginning and end of the study provided a comparison of the perceptions of each group and each grade level. As described in Campbell and Stanley (1963), the Pretest-Posttest Control Group design is most appropriate with the *Harter Self-Perception Profile for Children*.

Instrumentation

Harter Self-Perception Profile for Children Reliability and Validity

The manual for the *Harter Self-Perception Profile for Children* (2012) listed indices for internal consistency reliabilities for each subscale. Reliability coefficients

from the 1980s and 1990s utilized Cronbach's alpha. Reliability coefficients from each of the subscales as well as the global self-worth scale were included. The Cronbach's alpha ranged from .71 to .91 (see Table 4). Harter (2012) claimed these values are "extremely high and quite acceptable" (p. 12). As previously mentioned, Harter (2012) does not recommend test-retest for a reliability index because over time self-perceptions change. As regards to validity, Harter's 2012 manual broke down validity into separate parts: face, factorial, convergent, and construct validity. Harter claimed that for face validity the items asked about the concepts the checklist measured. As to factorial validity, Marsh's (1990) Self-Description Questionnaire had developed a measure which was age related and provided evidence of comparability. On the four subscales were correlations between .56 and .68. The factorial validity showed a difference between the six subscales with high loadings and no cross-loadings amongst factors. The manual included a statement that the model was drawn from William James (1892, as cited in Harter, 2012) and Charles Horton Cooley (1902, as cited in Harter, 2012) to ensure construct validity. As theorists, James' and Cooley's perceptions of competence, social support were the best predictors for Harter's subscale global self-esteem and the domains of self-worth, self-concepts, and global self-worth.

Table 4

Harter Self-Perception Profile for Children Subscale of Reliability

Self-Perception Profile for Children Reliability Coefficients						
	Subscales' alpha					
	SC	SoCo	AC	PA	BC	GSW
1980s samples						
A (n = 548)	.80	.80	.84	.81	.75	.84
B (n = 390)	.85	.80	.86	.82	.77	.80
C (n = 227)	.82	.75	.81	.76	.73	.78
D (n = 178)	.80	.75	.80	.80	.71	.78
1990s samples						
E (n = 230)	.80	.75	.76	.76	.76	.80
F (n = 294)	.80	.78	.85	.80	.80	.84
G (n = 346)	.84	.84	.89	.87	.86	.87
H (n = 331)	.84	.83	.91	.88	.87	.85

Note: Table is combined and adapted from "Table 1. Number of Subjects in Each Sample" and Table 2. Subscale Reliabilities for Eight Samples". *Harter Self-Perception Profile for Children* Manual (Harter, 2012). SC = Scholastic Competence, SoCo = Social Competence, AC = Athletic Competence, PA = Physical Appearance, BC = Behavorial Conduct, GSW = Global Self-Worth

Muris, Meesters, and Fijen (2003) provided evidence for reliability and validity of the instrument. The evidence from the study indicated a reasonable fit for the data of the first five subscales (Scholastic Competence, Social Competence, Athletic Competence, Physical Appearance, and Behavioral Conduct). Reasonable fit for the data would indicate the data could be replicated for the first five subscales. A sample size (N =

1143) was used and the chi square/degrees of freedom value ($x^2/df < 4.0$) was used due to the large sample size. The Five Factor Model was consistent as verified during the analysis of the factor structure. The Goodness-of-fit indices were: $x^2/df = 3.6$ [$x^2(395) = 1436.1$, $p < .0001$], RMSEA = 0.04, CFI = 0.83, NNFI = 0.82, and GFI = 0.96. As to the self-esteem subscales and the loading of the items on the five-factor higher-order model the data were found to be substantial between 0.65 and 0.84. A substantial correlation of the subscales of self-esteem with the Global Self-Worth subscale (r_s between 0.34 and 0.71. $p < .05$) were evidenced. The five subscales for self-esteem were found to have a moderate correlation with each other (r_s between 0.09 and 0.39, $p < .05$). Internal consistency was satisfactory (Cronbach's α range between .73 and .81). After an interval of 4 weeks the test-retest stability was good and the instrument was found to have produced consistent results and to have good validity.

Rudasill and Callahan (2008) replicated studies of the *Harter Self-Perception Profile for Children* (1985 version) for reliability ($N = 300$; Cronbach's α range between .54 to .87) and validity of the scores of TAG students. The evidence indicated that the instrument was reliable to use with TAG students with scores that were constant except for the scholastic competence subscale. The instrument had a lower measurement for reliability. The findings indicated that ethnic differences may be needed to be accounted for because the majority of the sample was White. Administration of the test may have been compromised because multiple administrators were used. Finally the gifted population may have been compromised because of the method the TAG students were selected (testing, teacher nomination, production of projects). A measure of sampling adequacy using the Kaiser-Meyer-Olkin resulted in good factor analysis with .88.

Overall Rudasill and Callahan (2008) found that the general population's scores were compatible to the TAG students' measures of validity and internal consistency.

Bosacki (2013) in her longitudinal study of self-concept in children along with their perceptions of humor and theory of mind, used three subscales from the *Harter Self-Perception Profile for Children* (1985). Reports on validity in her study were unavailable. However, she reported Cronbach's alpha on Global Self-Worth ($N = 28$; Cronbach's $\alpha = .89$); Physical Appearance (Cronbach's $\alpha = .79$); and Behavioral Conduct (Cronbach's $\alpha = .81$).

Harter Self-Perception Profile for Children Scoring

A total of 36 items for the students to rate about their perceptions of themselves were on the instrument. Each subscale contained six items. Harter (2012) referred to the arrangement of items as "counterbalancing" (p. 5) which was used to insure students did not answer randomly or mark boxes on only one side of the statement. The "counterbalancing" was reflected when the items were scored where half of the items are scored 1, 2, 3, 4 and the other half scored 4, 3, 2, 1 (see Figure 5). The items were arranged in such a way that the first three items had the beginning part of the statement reflecting a low competency and the remaining three items had the beginning part of the statement written to reflect a high competency. Subscale items are scored using 1, 2, 3, 4, with 1 representing the least adequate self-judgment and 4 representing the most adequate self-judgment. Items are grouped together by subscale for ease when calculating the mean (see Appendix F) and transferred to a data coding sheet.

1.	4	3	Some kids feel that they are very good at their schoolwork	BUT	Other kids worry about whether they can do the school work assigned to them	2	1
2.	1	2	Some kids find it hard to make friends	BUT	Other kids find it pretty easy to make friends	3	4
3.	4	3	Some kids do very well at all kinds of sports	BUT	Other kids don't feel that they are very good when it comes to sports	2	1
4.	4	3	Some kids are happy with the way they look	BUT	Other kids are not happy with the way they look	2	1
5.	1	2	Some kids often do not like the way they behave	BUT	Other kids usually like the way they behave	3	4
6.	1	2	Some kids are often unhappy with themselves	BUT	Other kids are pretty pleased with themselves	3	4
7.	4	3	Some kids feel like they are just as smart as other kids their age	BUT	Other kids aren't so sure and wonder if they are as smart	2	1
8.	4	3	Some kids know how to make classmates like them	BUT	Other kids don't know how to make classmates like them	2	1
9.	1	2	Some kids wish they could be a lot better at sports	BUT	Other kids feel that they are good enough at sports	3	4
10.	4	3	Some kids are happy with their height and weight	BUT	Other kids wish their height or weight was different	2	1
11.	4	3	Some kids usually do the right thing	BUT	Other kids often don't do the right thing	2	1
12.	1	2	Some kids don't like the way they are leading their life	BUT	Other kids do like the way they are leading their life	3	4

Figure 5. Sample scoring key from the *Harter Self-Perception Profile for Children* (2012).

The means were obtained for each subscale by using a data scoring sheet provided by the publisher (Harter, 2012) in which the items were grouped together for each subscale (see Figure 6). For example items 1, 7, 13, 19, 25, and 31 are grouped with the Scholastic Competence subscale. The scores range from 1 to 4 with a score of 1 or 4 being "really true for me" and the score of a 2 or 3 being "sort of true for me" (See Figure 5; Harter, 2012). For the means of the samples used by Harter (2012), the scores were generally above the midpoint fluctuating around 3.0.

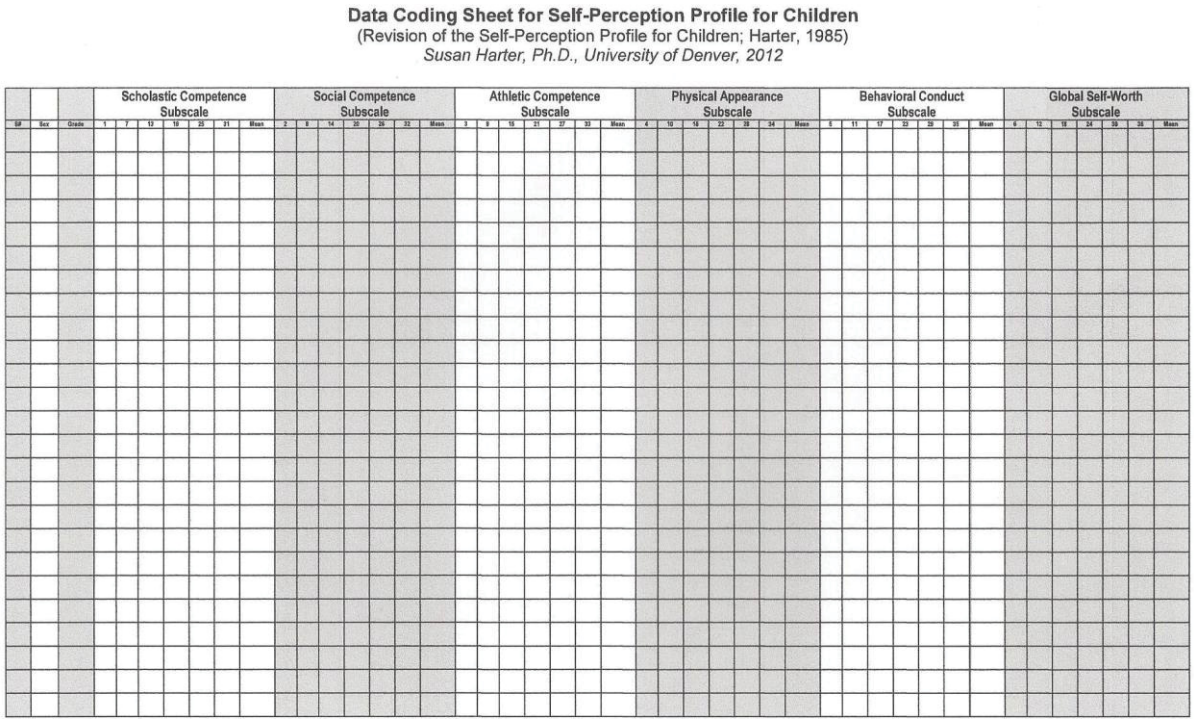

Figure 6. Sample Data Coding Sheet from the *Harter Self-Perception Profile for Children* (2012).

CRCT Validity and Reliability

Downey (2012) reported the Georgia Department of Education (GaDOE) contracted services for the CRCT. The services under contract included the development, administration, scoring and reporting of the CRCT while the assessment staff of the GaDOE was responsible for overseeing the task. The process followed the standards

developed by the National Council of Measurement in Education, The American Psychological Association, and the American Educational Research Association. The test items were examined by Georgia teachers and then field tested for appropriateness with a representative sample of Georgia students before they were counted in the results in subsequent years. A crucial step was field testing newly written items to ensure the items were not misleading, confusing, and were appropriate before students and schools were held accountable for the results. Six educational experts in the assessment field were members of a technical advisory committee tasked with giving advice on the processes. The committee met four times a year to review the processes of test development, scoring, and reporting. A peer review was conducted by the U.S. Department of Education. Additionally, peers selected from other states reviewed the data submitted to the U.S. Department of Education for overall quality and soundness of the measures. The GaDOE claimed the CRCT was built using a test blueprint designed with consideration to the content and difficulty. Each form developed was mirrored to the blueprint and previous forms to control for any changes. For validity purposes, the CRCT went through the equating process and the theta scale was the common metric used so that changes in student achievement in subsequent years was compared with the knowledge that changes in the test were not the cause for changes in student achievement. The theta scale ensured that different test forms were also compared so that differences in student achievement were not a difference in the difficulty of the test form. Each test form given during the same administration was also put through the equating process to ensure the tests were sound and appropriate.

The GADOE reported several reliability indices were used. Cronbach's alpha coefficient was used to measure the internal consistency of the test items' answers to a group of items measuring a particular trait. The standard error of measurement was also used to measure the variability of the test scores (see Figure 7). As reported by the Department of Education, the reliabilities were consistent and were considered reliable because the results were consistent over testing periods (Georgia Department of Education, 2013).

Reliability Coefficients (Cronbach's Alpha) and Raw Score SEM for Subject Area Tests by Grade										
Grade	Reading		English Language Arts		Mathematics		Science		Social Studies	
	Alpha	SEM	Alpha	SEM	Alpha	SEM	Alpha	SEM	Alpha	SEM
3	.90	2.37	.91	2.78	.93	3.02	.92	3.18	.92	3.13
4	.89	2.28	.90	2.66	.91	2.99	.92	3.12	.92	3.23
5	.88	2.45	.90	2.71	.91	3.06	.92	3.14	.92	3.25
6	.87	2.37	.90	2.72	.92	3.14	.92	3.28	.94	3.14
7	.87	2.41	.89	2.59	.92	3.13	.94	3.01	.94	2.96
8	.86	2.23	.88	2.71	.92	3.15	.92	3.28	.92	3.20

Figure 7. 2013 CRCT Reliability and standard error of measurement from the Department of Education. *An Assessment and Accountability Brief: 2013 CRCT Validity and Reliability* (Georgia Department of Education, 2013).

CRCT Administration and Scoring

According to the GaDOE (2013) students taking the CRCT received a mean scale score and standard deviation. The CRCT content area mean scale scores of students in the cluster grouped classrooms were compared with the mean scale scores of the students in the pull-out classrooms. The CRCT reports also included the number and percentages of the students at their performance level. These performance levels were Does Not Meet, Meets, and Exceeds. However, these were a broad range of scores and were not helpful at this level of achievement (See Appendix D). Downey (2012) reported the GaDOE stated in 2000, the first year of statewide testing with the CRCT the cut score was determined for each test form. The theta scale was used for the cut score, not the raw score. The score

was a cut score of 800 and was held constant for any subsequent year. The 2013 CRCT Score Interpretation Guide (GaDOE, 2013) reported the scale score for each content area resulted by converting the raw score on the test to the CRCT scale. The scale scores were equal across the different test forms within the same grade and content area. Scores below 800 indicated a performance level that Does Not Meet (i.e., the state's minimum level of proficiency). Scores from 800 to 849 indicated a performance level that Meets and scores at 850 or above indicated a performance level that Exceeds the test. Scores on the CRCT were generally structured to range from 650 to 900 or above. However, scores above 900 generally indicated exceptional performance.

Interviews and Focus Groups

Blumer (as cited in Patton, 2002) said that without asking participants through such methods as interviews and focus groups, understanding what people think and believe was difficult. The interaction of people, regardless of whether it was one-on-one with a participant and interviewer, or a group of participants and interviewer was the key to providing a real understanding of the participants' perceptions. Multiple interviews and the use of a focus group provided the researcher the ability to triangulate the results. The interviews followed the standardized open-ended interview as described by Patton (2002). In the standardized open-ended interview, questions were formatted before the interview and asked in the same sequence for each interview. Although the responses were open-ended, because the questions were the same wording and presented to the participant in the same order, the responses were able to be compared in an easier manner. Not only was this a methodical way to view results, but it aided in the analysis of the data (Patton, 2002).

Patton (2002) defined a focus group as a small group from the sample group consisting of six to ten participants. The interview questions for the group were open-ended. Focus groups were a way to glean participants' perceptions through the interactions in conversation with other participants having the same background. The participants were able to elaborate or refine their thoughts through participating with others in the focus group interview. Several reasons were chosen by the researcher for employing focus groups. One reason was affordability of time and money. No cost was involved in asking questions and multiple people could be interviewed with the same ten questions in a short period of time. Most participants enjoyed the social interaction and the group discussions provided a way for the participants to better explain their perceptions. Focus groups were also a good way to generate a big theme of the participants' perceptions.

Focus groups were held at the school during the school day. Focus groups were recorded for accuracy. The sessions were recorded using a small recording device and the conversations were transcribed at a later time. Seidman (2006) and Campbell and Stanley (1963) suggested transcriptions of recordings and having the same interviewer conduct the sessions helped to control for instrumentation validity threats. In preparation of the focus group sessions, open-ended questions were prepared for discussions for a free and open manner. As dialogue proceeded some impromptu questions were asked to check for understanding and further explore responses. Conducting focus groups along with the interviews enabled the researcher to build themes, discover patterns and relationships, develop explanations, make interpretations, and generate theories.

The open-ended interview was generated by using the software program Qualtrics (Qualtrics, 2014, Provo, Utah). The interview and focus group questions were open-ended questions and the results provided data to identify themes, discover relationships, and generate theories. Reliability and validity was also addressed with the use of multiple interviews, multiple focus groups, and outside coders to code the instruments. Controlling researcher bias was addressed by using other researchers for coding of interview and focus group questions. Using another trained coder ensured inter-rater reliability by rating the responses and categorizing them into themes and theories generated from the responses.

Procedures

The target population was the TAG students enrolled in the gifted program at the elementary level. Special precautions were taken to ensure the confidentiality of all the students who participated in the study. After a review from the Institutional Review Board (IRB) at Valdosta State University (see Appendix I), the data collection began. The Curriculum Coordinator at School B gained permission from the Superintendent, Human Resource Coordinator, and principals. Administrators at the district level and at School A where the researcher taught gave permission for the study. The gifted resource teachers at each school sent the participants' the informed consent and a letter describing the study (see Appendix E). As informed consents were returned, a coded list of participants was generated to ensure confidentiality and the availability to the researcher to remove participant data from the file if a participant withdrew from the study.

The data were gathered the last 2 months of the school year. This time period was to ensure an appropriate length of time to allow for changes in perceptions should they

occur. A longer time period between pre- and post-test was rejected based upon Harter's (2012) recommendation that changes which may occur between long intervals of retesting may not be attributed to changes in perceptions but changes due to another life event. Campbell and Stanley (1963) concurred in their discussion of the effects of history on internal validity.

When all the consent forms were returned, data collection began. The initial profile instrument, the *Harter Self-Perception Profile for Children* was administered to the students during April of the school year. The researcher provided each participant with a coded self-perception profile and read the standardized directions to the group. When completed the researcher compiled the data. Using the scoring guide included in the manual, the *Harter Self-Perception Profile for Children* was scored. In this study, quantitative data was used to answer Research Question 1 with the *Harter Self-Perception Profile for Children*:

1) Were there significant differences in the global self-worth (GSW) perception or the sub-scales of self-concept perception (SC = Scholastic Competence; SoCo = Social Competence; AC = Athletic Competence; PA = Physical Appearance; and BC = Behavioral Conduct) of gifted elementary students in cluster versus pull-out classrooms as measured using the *Harter Self-Perception Profile for Children*?

While the self-perception profile was being scored six participants from each grade at each school were invited to participate in a focus group. They were randomly selected using from the participant pool. The focus group was conducted by the researcher during April with each of the groups. Seidman (2006) recommended asking

questions which kept participants focused and asked them to reconstruct, not remember. With this framework, eight initial questions were asked (see Appendix B) to establish a relationship and construct some meaning for the focus group. Beginning with a set of questions provided some structure and standardization to the focus group sessions. Additional questions were drawn from responses from the initial administration of the profile. The focus groups were held at the respective schools and documented by audio recordings using a small digital voice recorder, after parental permission was gained. The researcher conducted all focus groups using the same initial questions (see Appendix B). The sessions were transcribed by a certified teacher, summed, checked, and coded by the researcher and a trained certified teacher.

After the focus groups were convened, two students were randomly chosen, one from each grade level and each group (cluster and pull-out) for the interviews. The open-ended interviews were held during the last 2 months of the school year. Questions from the focus groups' responses were asked in the open-ended interview to provide more explanations and clarifications for the researcher to gain a better understanding and clearer picture of the participants' perceptions (see Appendix A). The interviews were held via an on-line format using the software Qualtrics (Qualtrics 2014, Provo, Utah). The interviews were returned via email and were coded using the coded list of participants. Follow up emails were sent to participants who did not return the interviews within the requested time. All participating students were invited to attend an incentive refreshment party with ice cream sundaes. The interviews were coded and analyzed for patterns. Research Questions 2 and 3 were answered using the focus groups and interviews:

2) Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using an on-line structured interview with open-ended questions? (Appendix A)

3) Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using focus groups formed from six students at each grade level? (Appendix B)

The *Harter Self-Perception Profile for Children* profile was given again midway through the fourth 9-week period (end of May) as a post-test. The same procedures of reading the standardized instructions and administering the profile were followed as for the first administration. The data from both pre- and post-test administrations were compared and analyzed for changes in perceptions.

Obtainment of the CRCT scores was the final phase of the study. Scores were released by the Department of Education in late May. The researcher obtained the participants' scores from the administrators from each school after the students' names were removed to answer Research Question 4:

4) What are the achievement levels as measured with the mean scale scores of gifted elementary students in pull-out versus cluster using the Criterion Referenced Competency Tests (CRCT) total scores in reading, language arts, mathematics, science, and social studies content areas?

Data Analysis

This study began with the quantitative strand which helped to generate some of the qualitative strands which followed. The final piece was the re-administration of the *Harter Self-Perception Profile for Children*. The open-ended interviews and focus

groups helped explain results of the profiles. Each of the strands was interpreted as the results were integrated. The interviews and focus groups also connected and explained all the data. Merriam (2002) explained that the interpretation the researcher makes from the participants' interviews is a truer form of what is really going on than instruments with questions predefined. The data generated from the qualitative phase provided quasi-statistics or results obtained from simple numerical outcomes. Triangulation of the data was obtained from the variety of sources, achievement data, profiles, interviews, and focus groups. Maxwell (2005) said using a variety of data sources enabled a researcher to draw stronger conclusions based on evidence and helped to reduce biases and limitations. Asking the participants for their perspectives controlled for misunderstandings, researcher bias, and controlled validity threats (Maxwell, 2005; Merriam, 2002; Patton, 2002).

The quantitative phase closely resembled a quasi-experiment in that it utilized three groups assigned to two different program options. There were two program options (pull-out and cluster) and three comparison groups (third, fourth, and fifth grades). Quasi-experiments also use pre- and post-test data as this study did and are used because they are representative of the real world, what is practical and able to be done (Patton, 2002). Results from the quantitative phase of the profile instrument were used to answer Research Questions 2 and 3 by using qualitative data: Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using an on-line structured interview open ended questions? Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using focus groups formed from six students at each grade level?

Quantitative data was collected to answer Research Question 4: Were there significant differences in achievement levels of gifted elementary students in pull-out versus cluster using the Criterion Referenced Competency Tests (CRCT) total scores in reading, language arts, mathematics, science, and social studies content areas?

Research Question 1

The *Harter Self-Perception Profile for Children* was selected for this study to explore the perceptions of the students. The *Harter Self-Perception Profile for Children* was first designed in 1985 and revised in 2012. The profile used a multidimensional approach to provide students an opportunity to judge themselves across the different areas of their lives. The version of the instrument used was designed for students ages 8-15 or the upper elementary and middle school students. The quantitative data using the *Harter Self-Perception Profile for Children* were gathered at the beginning and end of the time period of the study. The initial profile's results helped to generate questions used during focus groups and interviews. The six domains on the profile asked students about their perceptions of themselves and their answers helped the researcher develop the interview questions to gauge changes in perception and to ask for more in-depth explanations. As profiles were returned the data were transcribed into SPSS (IBM SPSS Statistics for Windows, Version 22.0. Armonk, NY: IBM Corp). Comparisons between groupings' perceptions were analyzed for differences using a paired samples *t* test. A two-way ANOVA was performed on the subscales to compare the means of the subscales. The one-way ANOVA was appropriate to be used to compare the subscales' mean differences with the three grade levels. *Post-hoc* procedures by cluster and pull-out groups were performed to explore the data for possible differences between the

subscales (Campbell & Stanley, 1963; Field, 2009). With-in the grade levels the population sizes were fairly equal and the population variances were similar. The results were coded and themes generated to provide information to use with the qualitative strands.

Research Questions 2 and 3

Pseudonyms were assigned the participants to secure confidentiality. The researcher and coders transcribed, analyzed, and coded the transcripts beginning with the first focus group. The Qualtrics (2014) software used to generate the open-ended interviews provides an option to turn off IP addresses to further secure confidentiality. Merriam and Associates (2002) described qualitative analysis as one in which the analysis is simultaneous with the collection of data. The data yield themes and concepts which continue to emerge as the data is collected and is adjusted for subsequent data instruments according to Merriam and Associates (2002). Using the coded data the researcher identified overarching themes. After cross examination of the interviews and focus groups, any themes which appeared often were identified as overarching themes. The data from the interviews and focus groups were coded and analyzed for themes, patterns, relationships, and theories (Maxwell, 2005). The standardized open-ended interviews were analyzed by looking at the answers and grouping them together by the questions. This method is called a cross-interview analysis (Patton, 2002). The details and facts garnered from the focus groups and interviews told of the perceptions and experiences through the eyes of a gifted and talented student enrolled in a cluster or pull-out class and yielded rich, thick descriptions which promoted validity and reliability for this study (Maxwell, 2005; Merriam & Associates, 2002).

Research Question 4

Analyses for the data were made using a two-way ANOVA. A two-way ANOVA is appropriate when testing to see if the groups' means are significantly different with two independent variables (Campbell & Stanley, 1963; Field, 2009). These analyses were conducted during May when scores were made available for the Georgia CRCT. In this study, the means of the total scores in the content areas of the CRCT were compared for the pull-out group and cluster group for each of the grade levels. The independent variables of this study were the program options of pull-out and cluster. The dependent variables were the total content scores (mathematics, reading, language arts, science, and social studies) on the CRCT.

The reasons for collecting qualitative and quantitative data were to compare perceptions and achievement of TAG students in cluster and pull-out programs, to gain a better understanding of the perceptions, and to validate the results by using both forms of data (Creswell & Plano Clark, 2011). Patton (2002) agreed that limitations of data collection were reduced and strong points were increased with a mixture of resources. The variety of the resources added to the depth of the understanding of the participants' perceptions.

Chapter IV

RESULTS

The purpose of this study was to examine the perceptions, attitudes, and beliefs of gifted students in addition to their achievement. Furthermore, the changes in perceptions of the students enrolled in cluster and pull-out classes were explored. This study examined the possible differences between self-esteem perceptions, academic achievement, and the program model (pull-out versus cluster). The independent variables of the study were the program options of pull-out and cluster of the third, fourth, and fifth grade groups. The dependent variables were the total content scores (mathematics, reading, language arts, science, and social studies) on the CRCT to measure achievement and the mean scores of the subscales on the *Harter Self-Perception Profile for Children* to measure perception for each grade. Focus groups and interviews were held to seek clearer explanations and understandings of the students' perceptions and beliefs. The study sought to discover whether the effects in the achievement scores and perception subscales (dependent variables) of the two groups (independent variables) differed. The results are reported in order of the research questions beginning with the *Harter Self-Perception Profile for Children* followed by the interviews, focus groups, and findings from the Georgia CRCT.

Results

Research Question 1

Were there significant differences in the global self-worth (GSW) perception or the sub-scales of self-concept perception (SC = Scholastic Competence; SoCo = Social

Competence; AC = Athletic Competence; PA = Physical Appearance; and BC = Behavioral Conduct) of gifted elementary students in cluster versus pull-out classrooms as measured using the *Harter Self-Perception Profile for Children*?

The *Harter Self-Perception Profile for Children* was administered to both groups ($N = 59$) at each school location. The profiles were collected upon completion and the researcher scored them using the scoring guide from the profile manual. Comparisons between the beginning and ending perceptions were analyzed for changes in perceptions using a paired samples *t* test and SPSS. T tests are more appropriate for examining mean differences with only two groups (pre- and post-tests). However, the pre- and post-tests were administered too close together (a few weeks) for any differences to occur. The values of the subscales were not significant $p < .001$. Harter (2012) cautioned researchers to be aware that "self-perceptions can and do change over time" (p. 12), and the researchers needed to consider whether actual changes in self-perception had occurred or had the change been due to a school, home, or physical change. As a measure of reliability, it was recommended no longer than one month should lapse between pre- and post- administrations (Harter, 2012).

The data from the posttest were selected by the researcher to be used because the perceptions of the students might have been a truer picture on the posttest than the pretest because the students were more familiar with the layout of the profile. The means of each of the five subscales (Scholastic Competence, Social Competence, Athletic Competence, Physical Appearance, and Behavioral Conduct) and the mean for the Global Self-Worth scale were calculated for each student. These data were entered into SPSS and a two-way

Analysis of Variance (ANOVA) was conducted to examine the effects amongst the means of the subscales (see Table 5) and the pull-out and cluster program options.

Table 5

Harter Self-Perception Profile for Children Subscale Mean Scores for Cluster and Pull-out

Program Option	Subscale											
	SC		SoCo		AC		PA		BC		GSW	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Cluster	3.19	0.56	2.97	0.73	2.60	0.80	2.77	0.90	3.31	0.57	3.30	0.56
Pull-out	3.80*	0.28	3.33*	0.63	3.30*	0.70	3.51*	0.60	3.51	0.58	3.67*	0.45

Note. Harter Self-Perception Profile for Children (2012); SC = Scholastic Competence; SoCo = Social Competence; AC = Athletic Competence; PA = Physical Appearance; BC = Behavioral Conduct; GSW = Global Self-worth; *M* = Mean; *SD* = Standard Deviation; *$p < .05$.

Amongst the groupings only, all the subscales had statistically significant main effects, Scholastic Competence, Social Competence, Athletic Competence, Physical Appearance, and Global Self-worth (see Table 6).

Table 6

Main Effects for Groupings

Subscales	*df*	*F*	*partial* η^2	*p*
SC	1, 53	18.03	.25	.001 *
ScCo	1, 53	4.74	.08	.034 *
AC	1, 53	8.97	.15	.004 *
PA	1, 53	11.80	.18	.001 *
BC	1, 53	1.43	.03	.238
GSW	1, 53	47.59	.13	.008 *

Note. *Significant at the $p < .05$ *Harter Self-Perception Profile for Children* (2012);

Further exploration for possible differences led to a two-way ANOVA used to test whether the subscales' means (see Table 7) of the third (n = 15), fourth (n = 22), and fifth (n = 22) grade students on the *Harter Self-Perception Profile for Children* differed between the two grouping options, cluster (n = 37) or pull-out (n = 22).

Table 7

Harter Self-Perception Profile for Children Subscale Mean Scores for Cluster and Pull-out by Grade Level

Option	Subscale											
	SC		SoCo		AC		PA		BC		GSW	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
3rd												
Cluster	3.15	0.54	2.79	0.61	2.44	0.47	3.19	0.78	3.64	0.51	3.20	0.59
Pull-out	3.46	0.32	2.98	0.45	3.02	0.20	3.50	0.37	3.14	0.54	3.70	0.41
4th												
Cluster	3.05	0..45	2.73	0.66	2.68	0.72	2.53	0.89	3.02	0.61	3.34	0.54
Pull-out	3.92	0.15	3.32	0.67	3.32	0.80	3.35	0.70	3.47	0.63	3.53	0.50
5th												
Cluster	3.28	0.61	3.21	0.78	2.64	0.99	2.65	0.93	3.28	0.50	3.32	0.58
Pull-out	3.80	0.21	3.70	0.51	3.44	0.81	3.86	0.31	3.90	0.22	3.90	0.22

Note. Harter Self-Perception Profile for Children (2012); SC = Scholastic Competence; SoCo = Social Competence; AC = Athletic Competence; PA = Physical Appearance; BC = Behavioral Conduct; GSW = Global Self-worth; *M* = Mean; *SD* = Standard Deviation.

A statistically significant two way interaction was found between the groups and grade levels (see Table 8) on the Behavioral Conduct perception subscale, $F(2.\ 53) = 4.45$, $p = .016$, *partial* $\eta^2 = .14$.

Table 8

Groups and Grade Levels' Interactions

Subscales	*df*	*F*	*partial* η^2	*p*
SC	2, 53	1.67	.06	.197
ScCo	2, 53	.38	.01	.688
AC	2, 53	.08	.01	.926
PA	2, 53	1.14	.04	.327
BC	2, 53	4.45	.14	.016 *
GSW	2, 53	.67	.02	.518

Note. Significant at the $p < .05$ *Harter Self-Perception Profile for Children* (2012)* Statistically significant (see Figure 8).

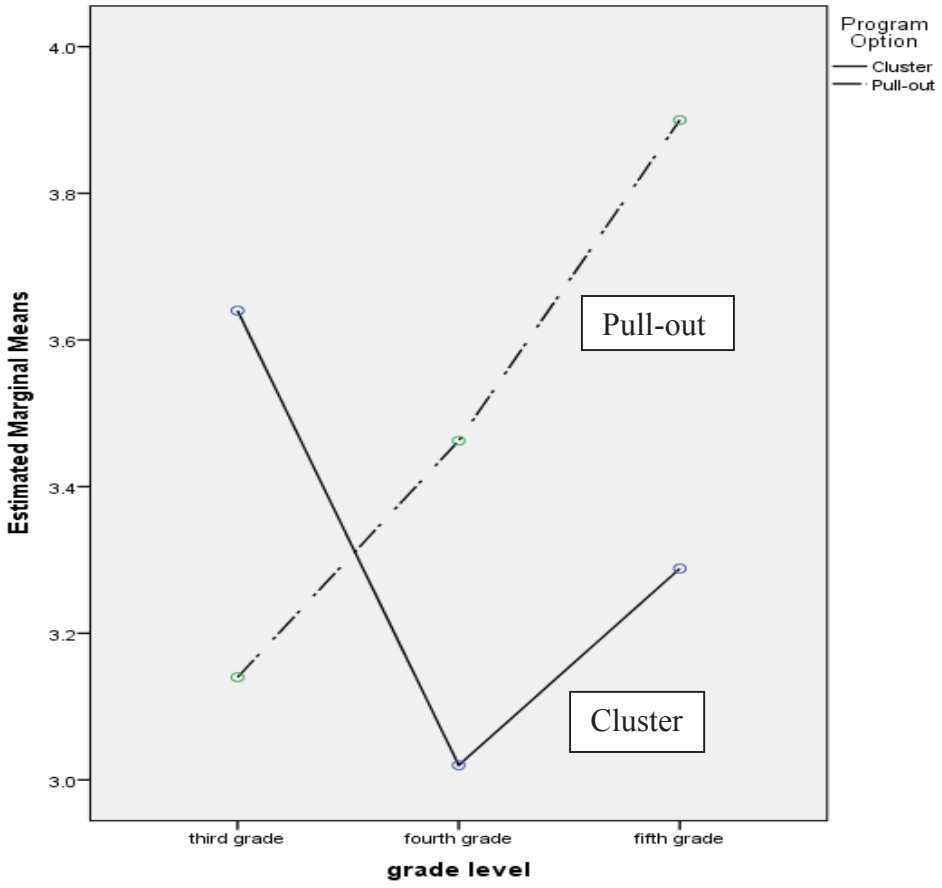

Figure 8. Behavioral Conduct Interaction amongst Groups and Grade Levels.

Grouping had a statistically significant effect on the perception scores of particular grade levels and subscales (see Table 9 and Figure 9).

Table 9

Scholastic Competence Grade Level and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fourth grade	Cluster	3.05	.14				
	Pull-out	3.92	.13	1,53	19.41	.27	.001*
Fifth grade	Cluster	3.28	.11				
	Pull-out	3.80	.20	1,53	4.70	.08	.035

Note. *$p < .05$; *Harter Self-perception Profile for Children*, 2012.

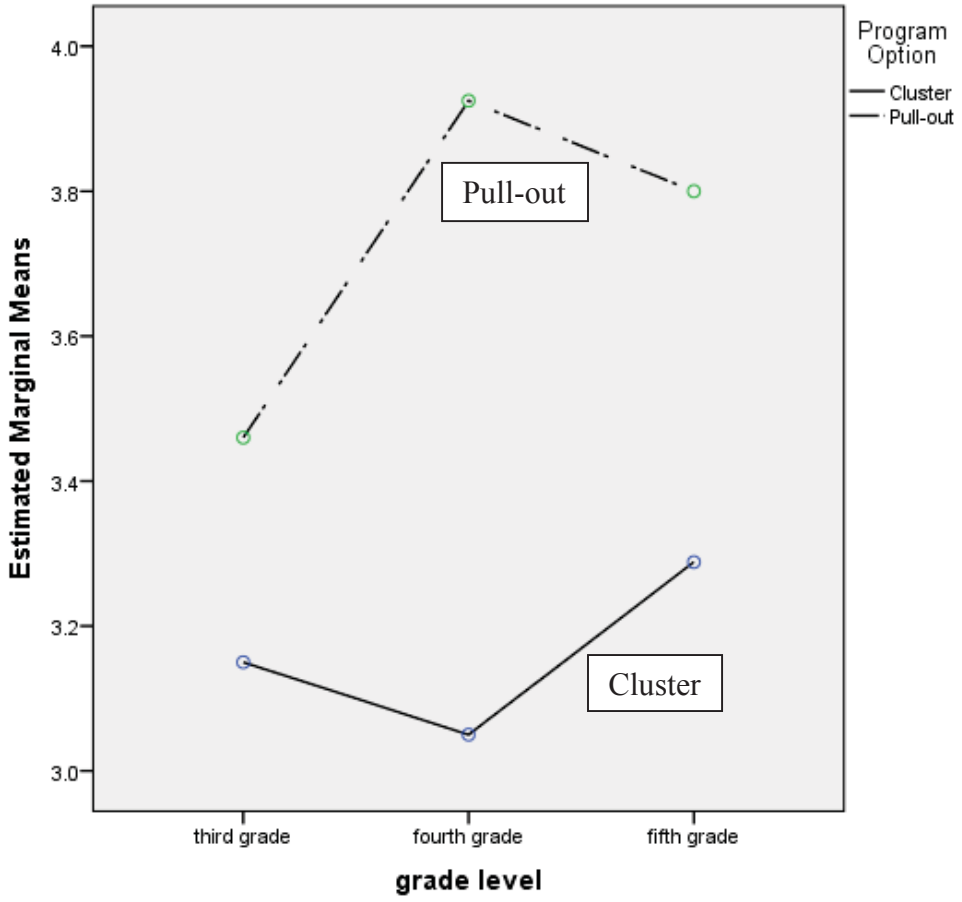

Figure 9. Scholastic Competence Grade Level and Program Option

The fourth grade pull-out group mean Scholastic Competence scores were significantly higher than the cluster group and for the fifth grade pull-out group and

cluster group. Scores for the fourth grade pull-out group in Social Competence were significantly greater than the cluster group (see Table 10 and Figure 10).

Table 10

Social Competence Grade Level and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fourth grade	Cluster	2.73	.21				
	Pull-out	3.32	.19	1,53	4.23	.07	.045*

Note. *$p < .05$; *Harter Self-perception Profile for Children*, (2012).

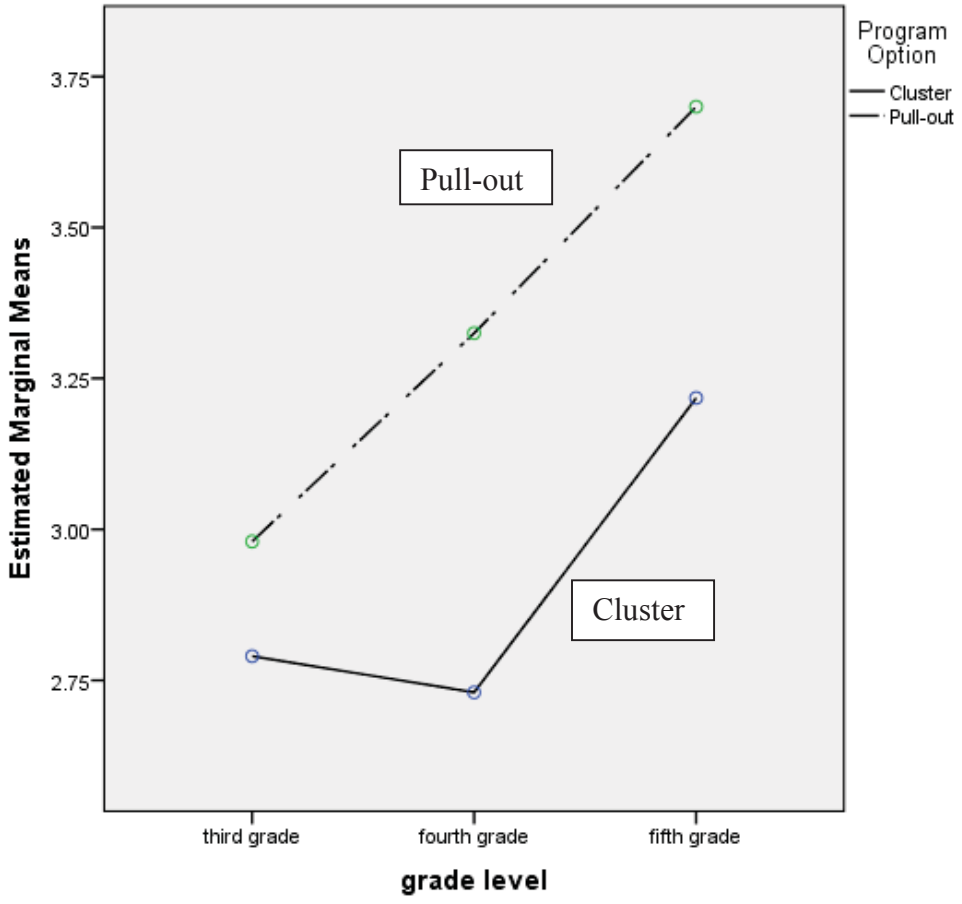

Figure 10. Social Competence Grade Level and Program Option

The Physical Appearance subscale data revealed statistically significantly greater results for scores of fourth and fifth grade pull-out groups and the fourth and fifth grade cluster groups (see Table 11 and Figure 11).

Table 11

Physical Appearance Grade Level and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fourth	Cluster	2.53	.25				
grade	Pull-out	3.35	.22	1,53	5.99	.10	.018*
Fifth	Cluster	2.65	.19				
grade	Pull-out	3.86	.35	1,53	8.92	.14	.004*

Note. *$p < .05$; *Harter Self-perception Profile for Children* (2012).

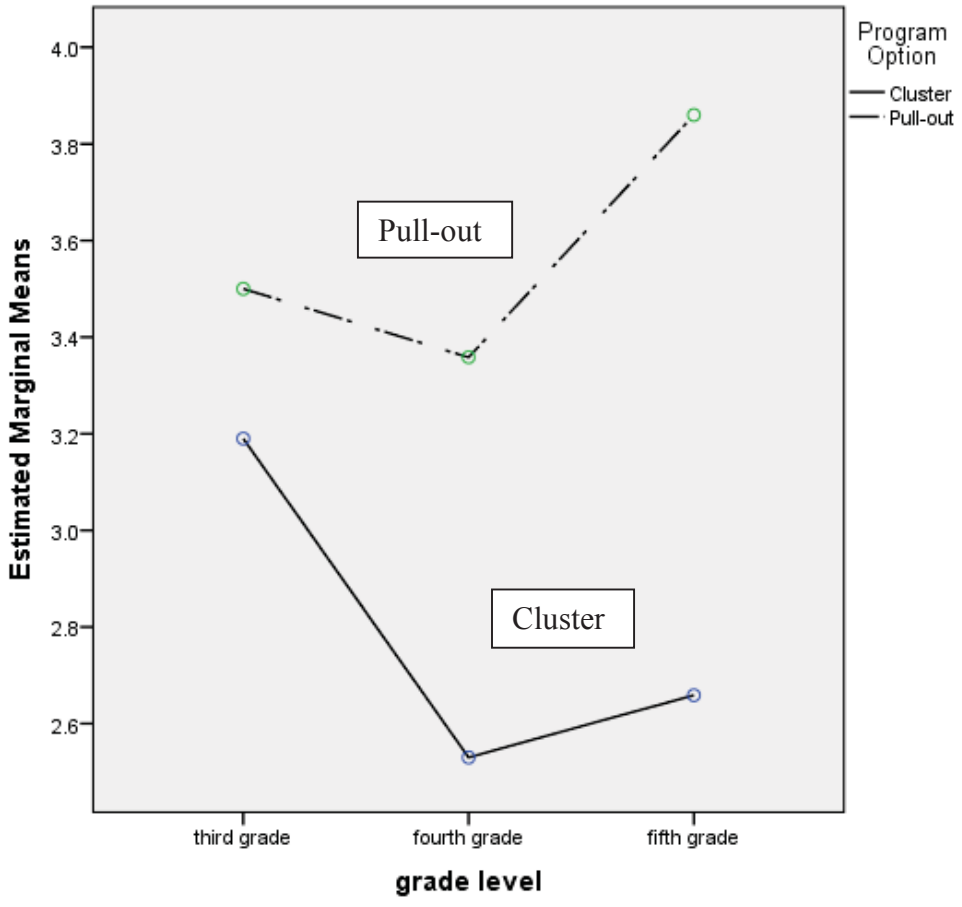

Figure 11. Physical Appearance Grade Level and Program Option

Fifth grade pull-out students' scores were statistically significantly greater in Behavioral Conduct (see Table 12 and Figure 12) and Global Self-worth (see Table 13 and Figure 13) than the fifth grade cluster group in Behavioral Conduct and Global Self-worth.

Table 12

Behavioral Conduct Grade Level and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fifth grade	Cluster	3.28	.13				
	Pull-out	3.90	.24	1,53	4.98	.09	.030*

Note. *$p < .05$; *Harter Self-perception Profile for Children* (2012).

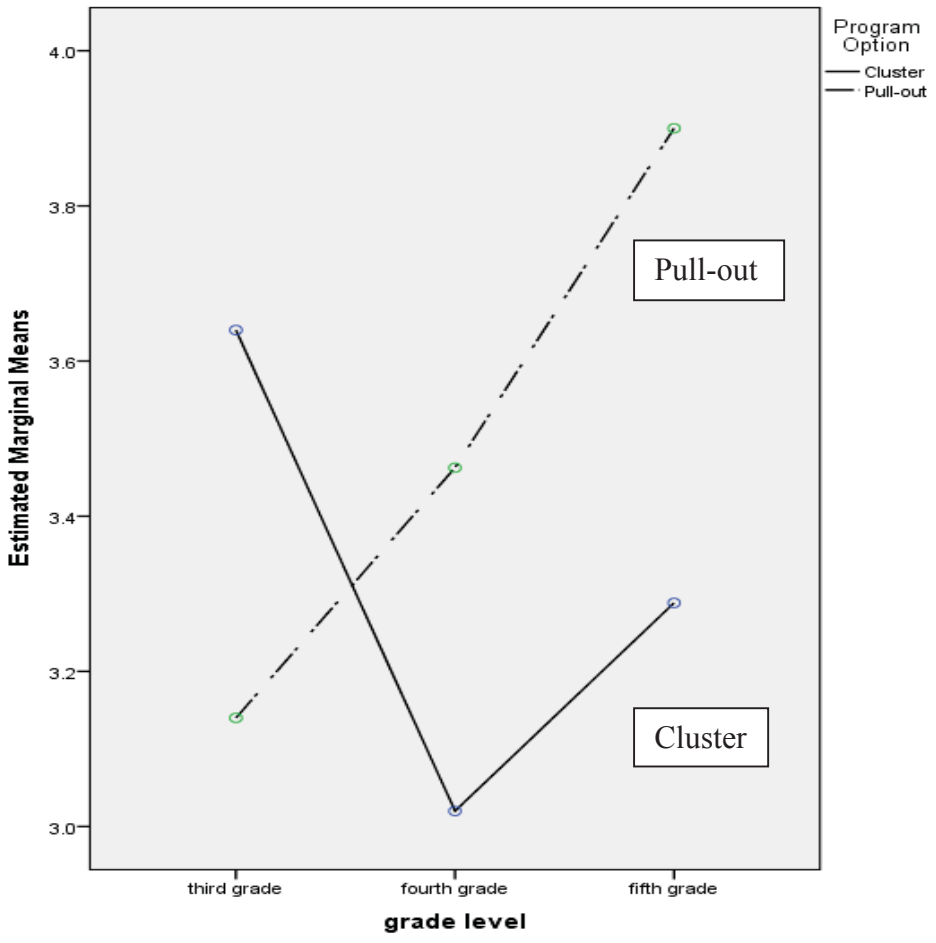

Figure 12. Behavioral Conduct Grade Level and Program Option

Table 13

Global Self-worth Grade Level and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fifth grade	Cluster	3.32	.12				
	Pull-out	3.90	.23	1,53	4.44	.08	.040*

Note. *$p < .05$; *Harter Self-perception Profile for Children* (2012).

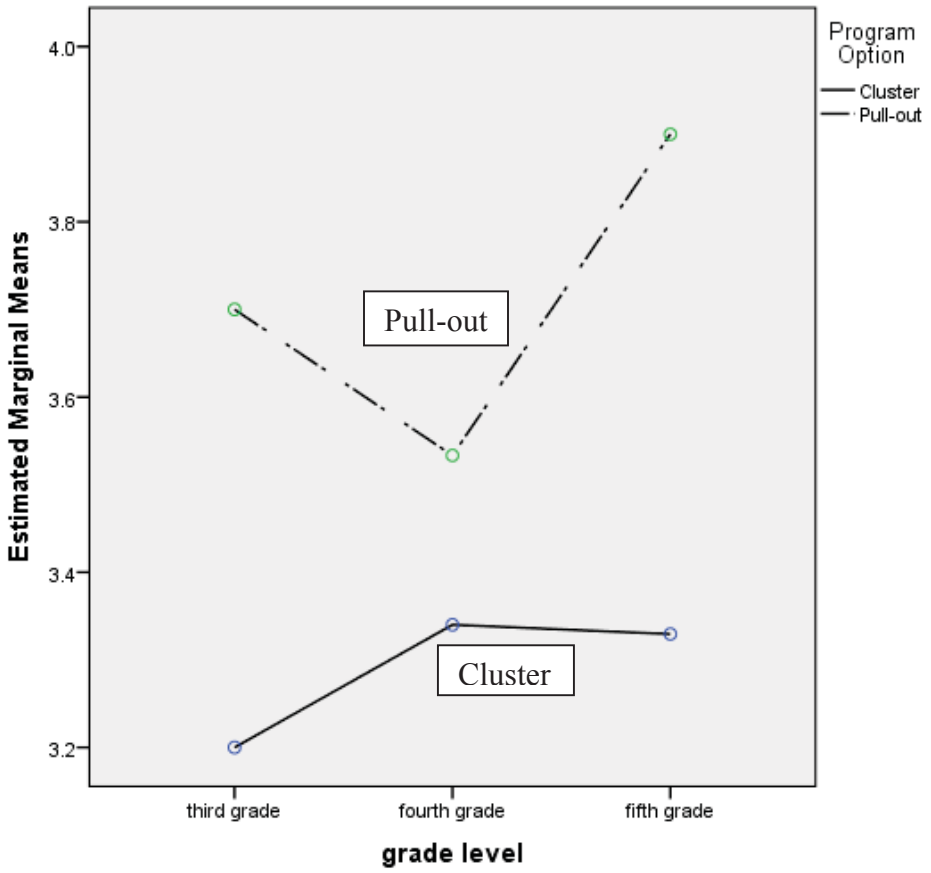

Figure 13. Global Self-worth Grade Level and Program Option

There were outliers in the data for some of the subscales (see Table 14) as assessed by an inspection of the boxplots for values greater than 1.5 box-lengths from the edge of the box. After checking for data entry errors and measurement errors, the researcher determined the outliers were most likely genuinely unusual data points. A two-way ANOVA was conducted on the cluster and pull-out program options to examine

the means on the subscales using the outliers and another was run replacing the outliers with the next largest value. The results of the two were compared and there was no significant difference that would alter the conclusion. Hence, the outliers were included in the data.

Table 14

Subscale Outliers for Cluster and Pull-out by Grade Level

Grade Level	Program Option	Subscale						N
		SC	SoCo	AC	PA	BC	GSW	
3rd	Cluster					3		10
	Pull-out	1	1			2	1	5
4th	Cluster							10
	Pull-out	1						12
5th	Cluster		2				3	17
	Pull-out		1	2	1	1	1	5

Note. SC = Scholastic Competence; SoCo = Social Competence; AC = Athletic Competence; PA = Physical Appearance; BC = Behavioral Conduct; GSW = Global Self-worth.

The scores for Scholastic Competence, Social Competence, Athletic Competence, Physical Appearance, Behavioral Conduct, and Global Self-worth were normally distributed for the cluster program and pull-out options as assessed by Shapiro-Wilk's test ($p > .05$). The assumption of normality was violated ($p < .05$) for fourth grade pull-out in Social Competence, fifth grade cluster, fourth and fifth grade pull-out in Athletic Competence, fourth and fifth grade pull-out in Physical Appearance, third grade cluster, fourth and fifth grades pull-out in Behavioral Conduct, and fourth and fifth grade pull-put and fifth grade cluster in Global Self-Worth scores, as assessed by Shapiro-Wilk's test ($p < .05$). Additionally, using a visual inspection of their histograms to assess for normality

yielded the same results. The Normal Q-Q plots for each subscale showed the data were not too distorted to violate an assumption of normality. Students enrolled in the pull-out program option perceptions' were higher than those students' perceptions in the cluster program option in all the subscales (see Table 5).

There was homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance (see Table 15) for Social Competence, Physical Appearance, Behavioral Conduct, and Global Self-worth. Scholastic Competence and Athletic Competence did not have equal variance and were statistically significant at ($p < .05$).

Table 15

Levene's Test of Homogeneity of Variance

Subscales	*F*	*p*
SC	3.89	.004 *
ScCo	.67	.651
AC	3.62	.007 *
PA	1.89	.112
BC	1.11	.367
GSW	1.11	.371

Note. Statistically significant at $p < .05$; * Assumption of assumption of homogeneity of variances was violated; *Harter Self-Perception Profile for Children* (2012).

In summary, a two-way ANOVA was conducted to examine the effects of the program options (cluster versus pull-out) on the means of the subscales of the Self-concept perceptions of gifted elementary students as measured using the *Harter Self-Perception Profile for Children*. The participants were in two program options, cluster ($n = 37$) and pull-out ($n = 22$). There were outliers in the data (see Table 14), as assessed by inspection of the boxplots, in each of the subscales however, it was determined they were genuine data points and were not removed. Data were normally distributed as assessed by Shapiro-Wilk's test ($p > .05$) for the combination of the grade levels and grouping

options in Scholastic Competence, Athletic Competence, and Physical Appearance. The data for all other subscales and the pull-out group were not normally distributed as assessed by Shapiro-Welk's test ($p < .05$); but there was homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance (see Table 15) for Social Competence, Physical Appearance, Behavioral Conduct, and Global Self-Worth. For the subscales of Scholastic Competence and Athletic Competence the assumption of homogeneity of variances was violated, as assessed by Levene's Test of Homogeneity of Variance. There were statistically significant two-way interactions between all the subscales and the cluster and pull-out groups (see Table 6) Scholastic Competence, Social Competence, Athletic Competence, Physical Appearance, and Global Self-worth. Grouping had a statistically significant effect on the perception scores of particular grade levels and subscales (see Tables 9-13 and Figures 9- 13).

Research Question 2

Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using an on-line structured interview with open-ended questions?

The Qualtrics (Qualtrics, 2014, Provo, Utah) open-ended interview was sent via email to each participant with an email address provided by the parent or guardian of the participant. There was a rate of 77% of the interviews completed and returned. By random selection, two participants from each focus group were selected for ion-depth interviews for a total of 12 participant interviews. Questions concerning demographic data were included on the interviews. The data are presented in question order for the 12 selected interviews in Figures 18-20. Demographics for the participants are reported in

Figures 14 through 17. Data for the total responses will be included at the end of this section.

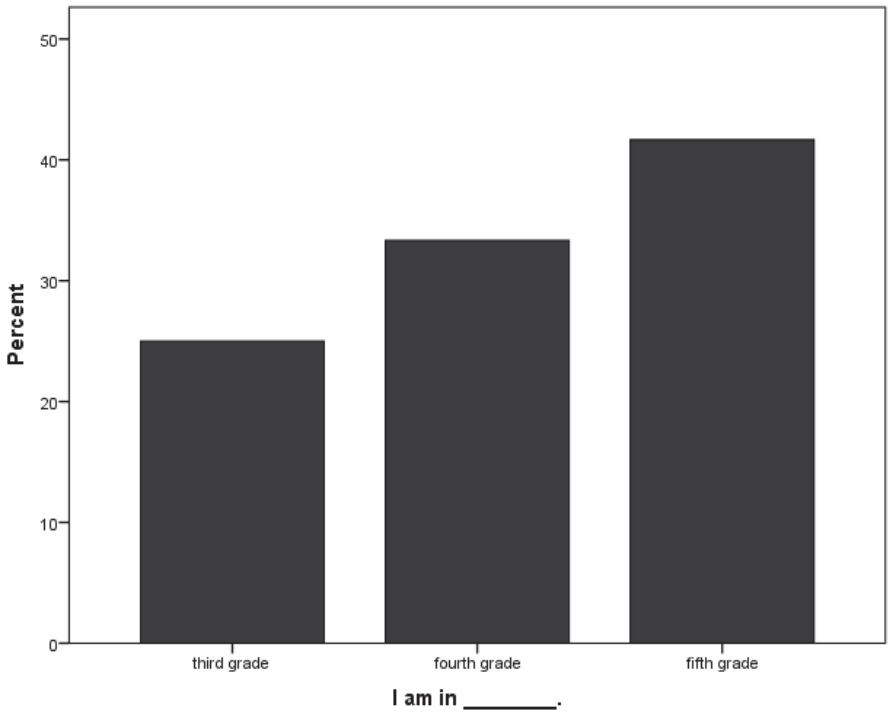

Figure 14. Percentage of Students per Grade Level from all Interviews.

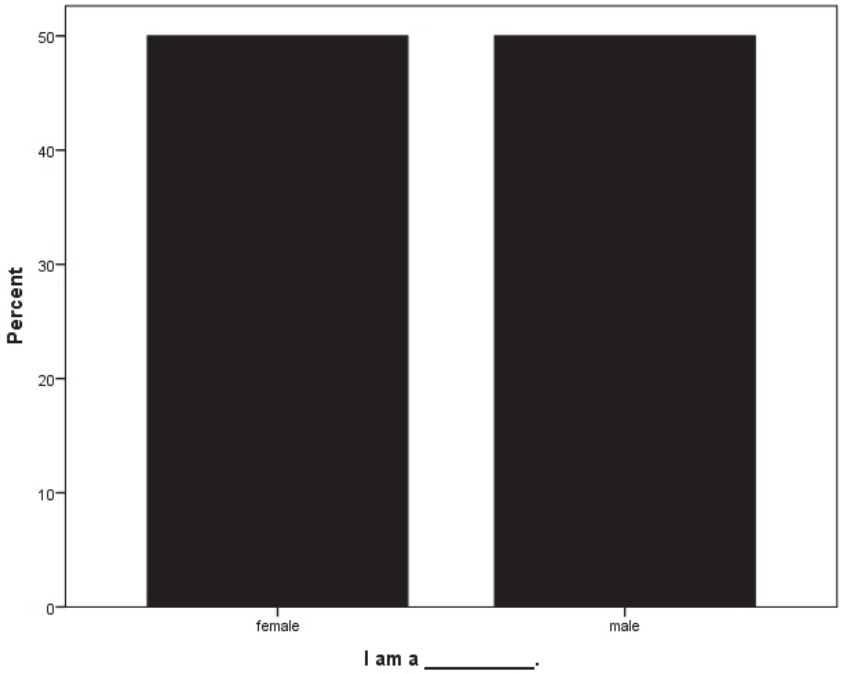

Figure 15. Percentage of Females versus Males from all Interviews.

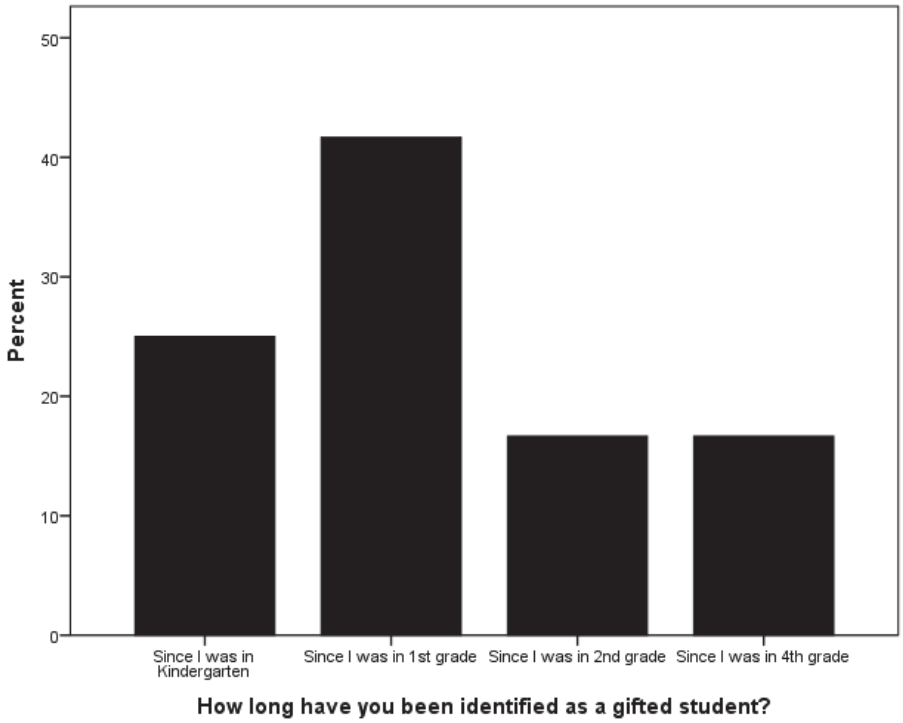

Figure 16. Grade Participants were Identified TAG from all Interviews.

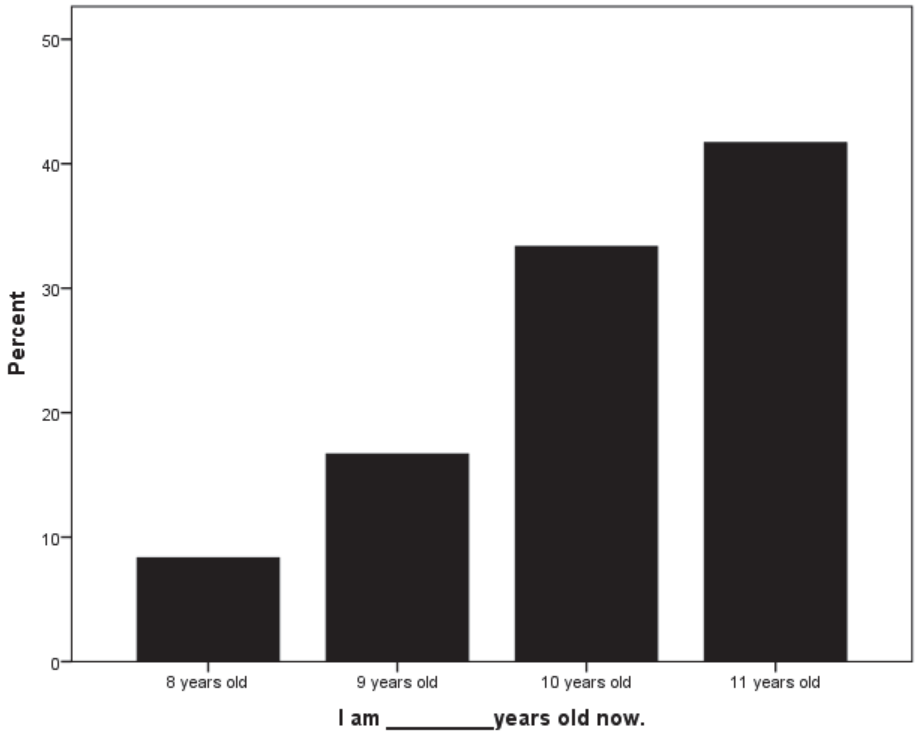

Figure 17. Age of Participants from all Returned Interviews.

Question 1: *I have experienced time in a gifted cluster classroom.* Data are reported in Figure 18.

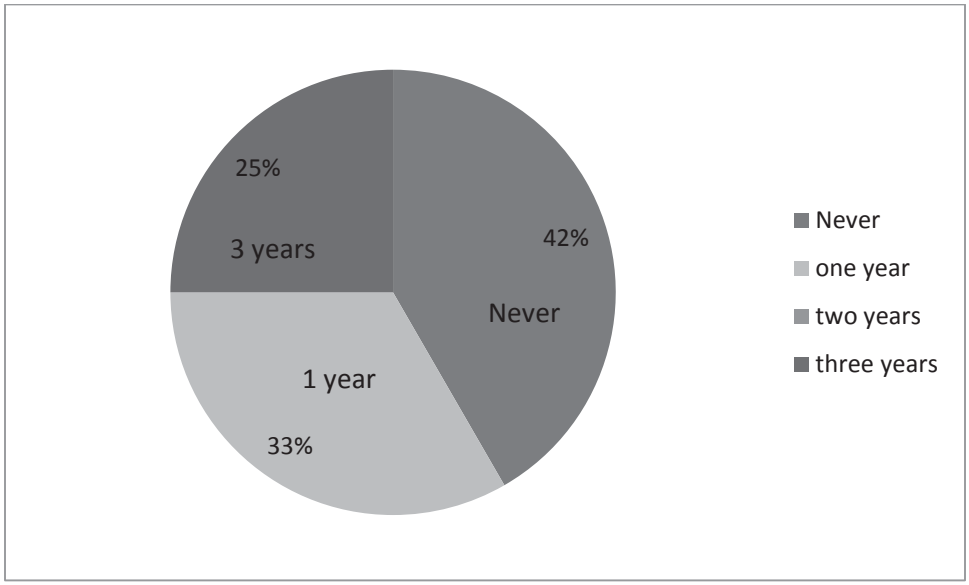

Figure 18. Number of Participants Experiencing Time in a Gifted Cluster Classroom from Participant Interviews.

Question 2: *I have received services in a pull-out model.* Data are reported in Figure 19.

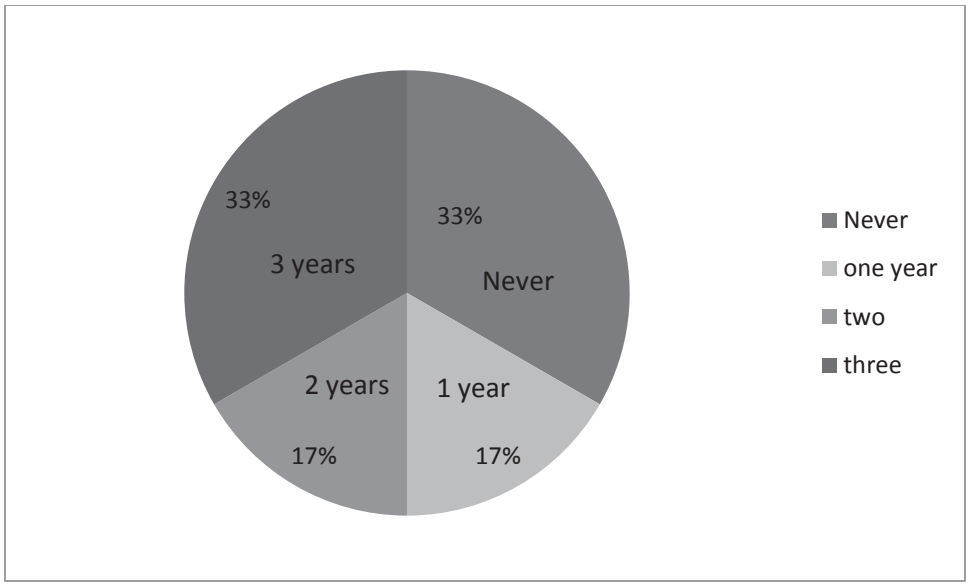

Figure 19. Number of Participants Experiencing Time in a Gifted Pull-out Classroom from Participant Interviews.

Question 3: *There are other gifted students in my homeroom.* Data are reported in Figure 20.

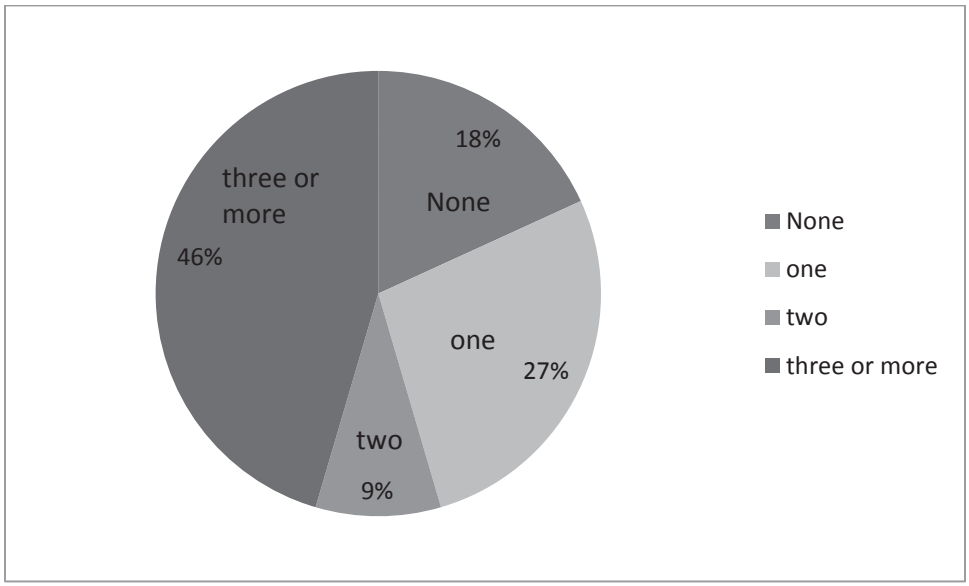

Figure 20. Number of Participants Reporting Other Gifted Students in Homeroom from Participant Interviews.

Question 4: *Describe your experiences in a pull-out model.* Six students responded to this question with each response being unique. Three participants mentioned the pull-out model being "fun" or doing "fun projects." The students' direct quotes follow.

- I do all my other work in regular class, then I get pulled out for about an hour to learn a certain subject in gifted.
- I go to discovery for social studies. We do very fun things, such as watching movies that are fun yet educational. My typical day starts with morning work. After that we go to discovery then exploratory. After exploratory we do reading and then lunch. Next we have math after that is recess. Finally it is time for science, and after that it is time to go.
- I go to my class and do reading and all the other stuff with them except for science. For science I go to Discovery. I get to do a lot of experiments.
- I normally work on Social Studies in Discovery. Sometimes though we work on fun projects.
- It sort of makes me feel left out of my homeroom's activities my classmates might do while I'm in a pull-out gifted session. My other classmates sometimes might be taught science differently than I am taught in pull-out gifted science. Since I'm the only person in the classroom that leaves during science, my classmates ask me where I go, I say discovery but it's hard to explain what that is without seeming braggish, so in my opinion, it's better to be in a cluster classroom.
- It's better than a regular class. I was pulled out for Science and learned more. It was fun to be pulled into another classroom with my friends.

Question 5: *What are the advantages and disadvantages to being in a cluster classroom with a group of gifted students all day?* There were seven responses. The students' direct quotes follow.

- Advantages - you get to get out of your regular class to do different things. Disadvantages - you don't get to see your friends in your regular class.
- At the end of the day announcements from my teacher. I wouldn't be there because of gifted and I wouldn't know something important for the next day. I feel like the only one that doesn't know what's going on about homework, important announcements, etc.
- I like going to Discovery because I get to do more fun things. We get to build robots and do experiments. It's bad sometimes because she keeps us late and we are late to lunch.
- I was pulled at the end of the day and sometimes missed assignments or papers that were sent home. I liked being pulled and going to another class.
- The advantage is that people can depend on all TAG students. For example we play jeopardy and if we're on a question the other students will depend on the TAG students. The disadvantage is that if we are working in groups and like I said other students depend on TAG students for answers in group work. Therefore, if TAG students get a problem wrong while working in groups then the other group members will get angry at the TAG student.

- The advantage is that the smaller class size in gifted had fewer distractions and all the people were just like me so I felt like we all connected. One disadvantage was that I sometimes felt funny leaving my regular ed class because I didn't want any of my other classmates to feel like I was better. It was always so obvious when I left and I didn't like that.
- When one of us doesn't understand a question the others can help us out. We sometimes tease each other but we're just joking.

Question 6: *What are your experiences in a gifted cluster classroom?* There were eight responses. The students' direct quotes follow.

- All the kids were on the same routine and it was easier to get used to since we were all together in a classroom. It's aggravating and difficult to have to keep switching and changing classes all the time but in a cluster classroom, you don't have to deal with that anymore.
- Class is easy and boring. I know all the answers and everything we are doing all day.
- Fun we usually do morning work then work on projects. We have a project on all the time. Every nine weeks (give or take a few weeks) at the moment we are working on a travel project. Next Thursday (for my class) we are supposed to start to make a rocket to launch.
- Like a normal class, but when I go to TAG I miss specials and have extra work to do the next day.
- We did groups, and the group I was in was gifted so we kinda did advanced material. We never left the room though.

- Every now and then we were able to do something else, for example robotics.
- We work on projects and learning harder things than the others are taught like Algebra.
- Well I go to school and gem my agenda signed. Then I pack up. When I'm at TAG first I put down the chairs. Then I do work out of my purple folder. Then I just do other activities. Then we all pack up and go to our homeroom class.

Question 7: *What are the advantages and disadvantages to being in a cluster classroom with a group of gifted students all day?* There were eight responses. The students' direct quotes follow.

- All the kids are on the same level and there are other non-discovery kids from our grade in the class too which makes it feel like a normal classroom, which is what I like. Everybody knows what's going on.
- Good: I can help people that aren't in TAG; I find class easier than the rest of the kids might. Bad: Sometimes the other TAG students act like they are smarter than the other kids.
- It's easier than being in a normal classroom because all of the students are working on the same level and at the same pace. But the work is definitely harder so it's also really easy to look like you're not smart.
- One advantage is that nobody knew we were being taught advanced material, so it wasn't obvious. No one felt bad. Disadvantages are that we didn't get full attention from our teacher because she had to tend to the

rest of the class. We also did not study anything in-depth and do reports. I also did enjoy getting out and doing something different once a day even though it was obvious leaving.

- The advantages are going on field trips and learning the more challenging stuff. The disadvantage is that we don't get to work on projects in homeroom because we already do them in our gifted class.
- The disadvantage is having to come back to class and to extra work. The advantage is that during that day we might learn something that students that aren't in TAG will probably learn in fifth grade.
- We get to help the other kids. Everyone expects us to know everything.
- We were all able to be together. It was fun.

Question 8: *What do you do when your teacher gives you school work or tasks which are challenging or hard for you?* All 12 students responded to Question 8. The students' direct quotes follow.

- Ask for help and work with the other gifted kids in the class to get help too.
- At first I try to think of the answers all by myself, but after a couple of minutes I ask someone for help.
- Do my best to get it done good.
- I ask for help on the sample question to see how to do it and if I still don't understand I get someone at my table to help me.
- I don't give up. I keep thinking and keep thinking and if I don't get it, I raise my hand and ask the teacher to explain it.

- I just do it anyway.
- I look for the answer in the book or ask her for help.
- I try my best.
- I try to do my best. Sometimes I ask for help but sometimes I am too scared to ask for help because I don't want the teacher to get mad at me.
- The school work is not difficult for me, but if it was I would try to solve it or ask for help.
- Use things I've learned in my gifted and regular class.
- Usually when I get work that's hard for me I just ask for help.

Question 9: *Do you have any comments or experiences you would like to tell me about?* There were nine responses. The students' direct quotes follow.

- I enjoy going to gifted. It has really challenged me and I have learned so much. I enjoy being with the other gifted kids too!
- I like the cluster classroom better because it's easier and more organized.
- I love the gifted program and it is more fun than regular school.
- I think it's really easy to talk to my teacher because I feel really comfortable with her.
- I think that being in discovery really helped me a lot in Social Studies.

There were two additional responses of "no" and two others responding "no I do not."

After grouping questions and responses from the structured open-ended interviews using key words and phrases, different and similar patterns emerged between the grouping options. Students who had experienced clustering related: a) they liked working together; b) they would ask each other for help; c) they did not feel different

because they were in a group together; d) content was differentiated and advanced; and e) they enjoyed doing projects. For students who had been enrolled in pull-out programs the patterns which emerged were: a) resource room projects were fun; b) content was challenging; c) students felt left out or missed work when leaving regular classroom; d) students liked being with their peers; and e) they felt they learned more in the resource room. Using a simple frequency count the over-arching themes were: a) TAG students enjoy working together; b) they enjoy challenging projects and see them as fun; c) they do not like being singled out from both the pull-out and clustered groups.

Due to the ease and affordability of administering the open-ended interview online, the researcher determined that the interview would be released to all participants providing emails. There were 57 email addresses provided by the participants' parents or guardians. Only 48 of those emails were able to be used and 13 emails had either closed accounts or the address was illegible. The rate of open-ended interviews returned and marked completed by the participants was 77%. Results were analyzed for the 37 completed interviews using the Qualtrics (Qualtrics, 2014, Provo, Utah) program. Data was imported to SPSS for analysis. Missing data were found in nine interviews and they were removed because the data missing were the responses from open ended questions. Although the nine interviews were incomplete with missing data, the descriptive tables with demographics are included to provide more information about all the participants.

Question 1: *I have experienced time in a gifted cluster classroom.* Data are reported in Figure 21.

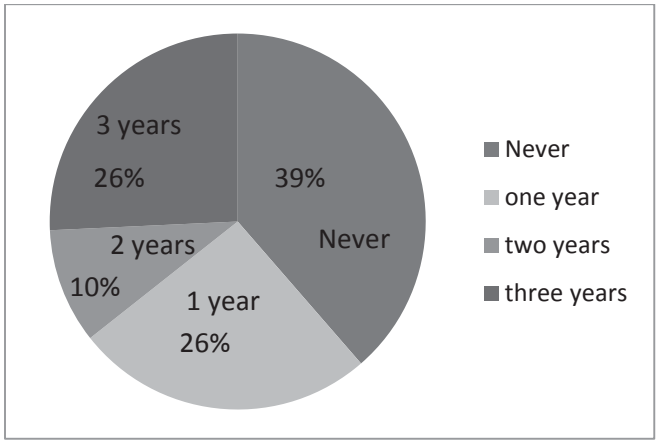

Figure 21. Number of Years Students have Experienced in a Gifted Cluster Classroom.
Mean = 2.23; Standard Deviation = 1.23;
Demographics include any interview returned.

Question 2: *I have received services in a pull-out model.* Data are reported in Figure 22.

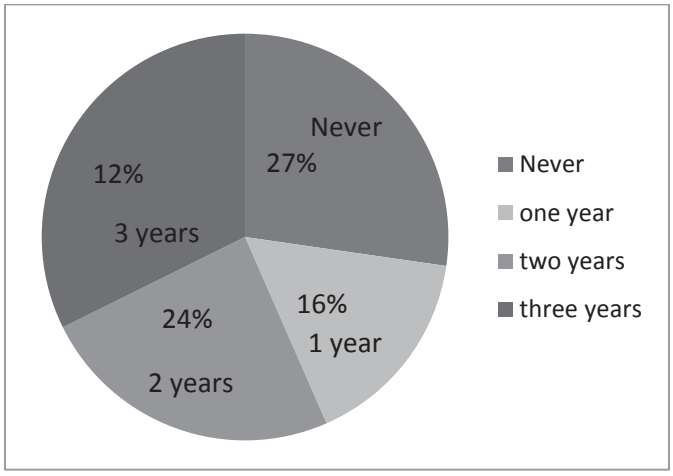

Figure 22. Number of Participants Experiencing Time in a Gifted Pull-out Classroom
Mean = 2.89; Standard Deviation = 1.21;
Demographics include any interview returned.

Question 3: *There are other gifted students in my homeroom.* Data are reported in Figure 23.

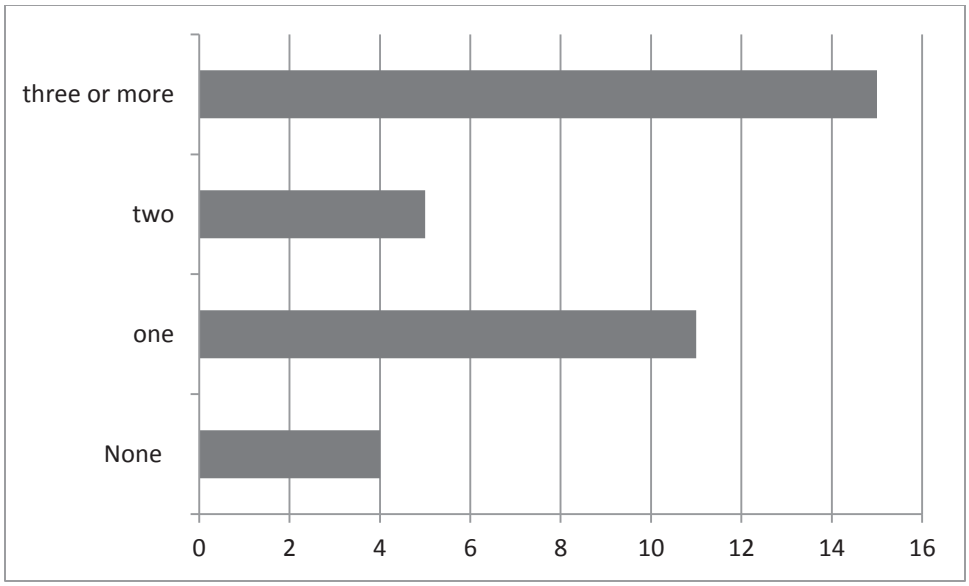

Figure 23. Number of Participants Reporting Other Gifted Students in Homeroom; Mean = 2.89; Standard Deviation = 1.11; Demographics include any interview returned.

There were 15 responses to Question 4 describing experiences in a pull-out classroom. Fifteen participants responded to Question 5 asking about advantages and disadvantages to being the only gifted student in a classroom. Fourteen described experiences in a cluster classroom in Question 6. Question 7 describing advantages and disadvantages to being in a cluster classroom was answered by 15 participants. Twenty-five students responded to Question 8 about what they do when work is challenging or hard for them. Sixteen participants added comments or experiences under Question 9. Demographic information is provided in Figures 24 through 28 for the 28 completed interviews.

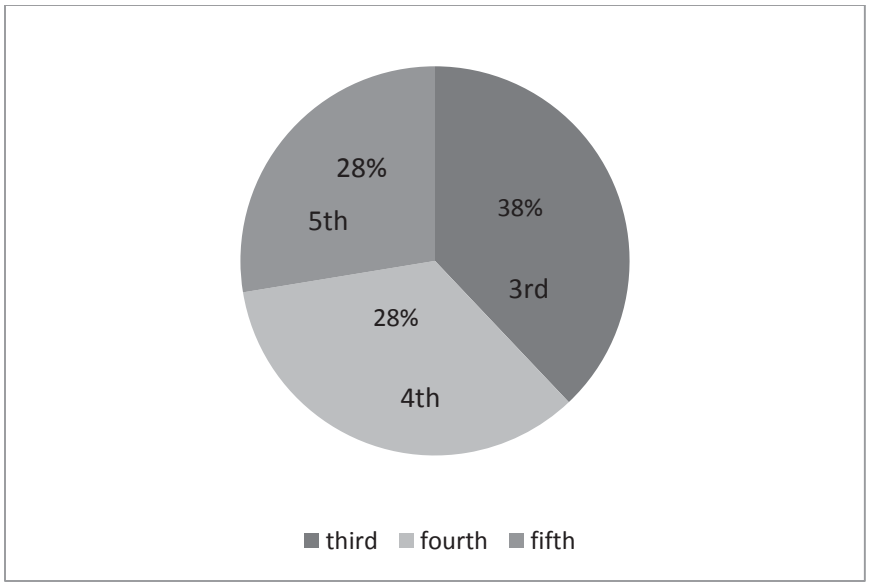

Figure 24. Grade Levels. *Notes.* Adapted from data provided by Qualtrics (Qualtrics, 2014, Provo, Utah).

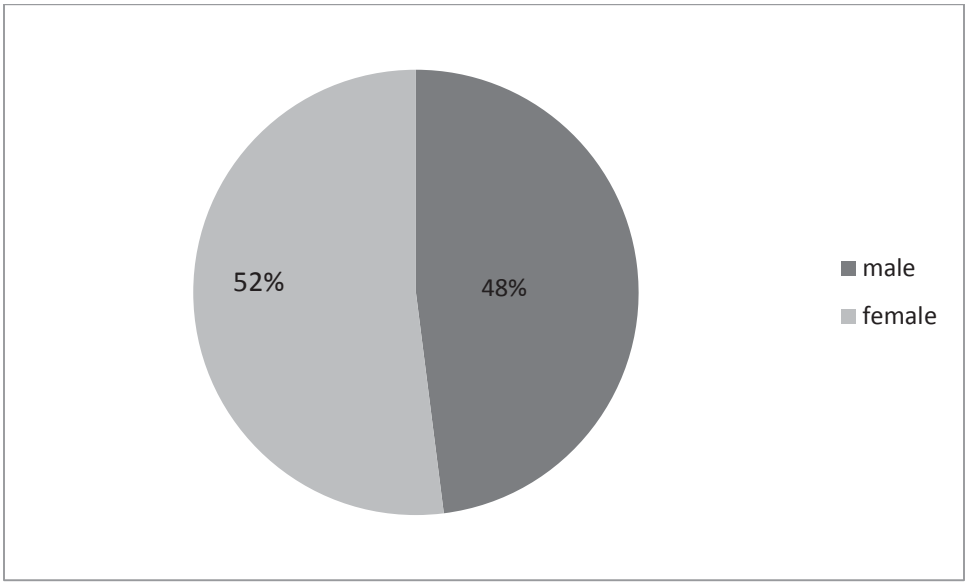

Figure 25. Gender. *Notes.* Adapted from data provided by Qualtrics (Qualtrics, 2014, Provo, Utah).

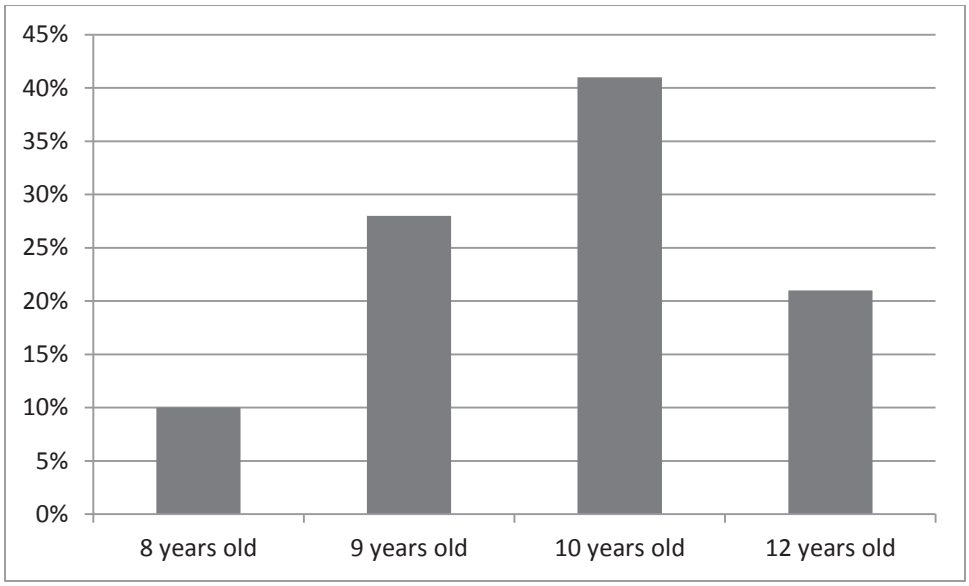

Figure 26. Age of Participants. *Notes.* Adapted from data provided by Qualtrics (Qualtrics, 2014, Provo, Utah).

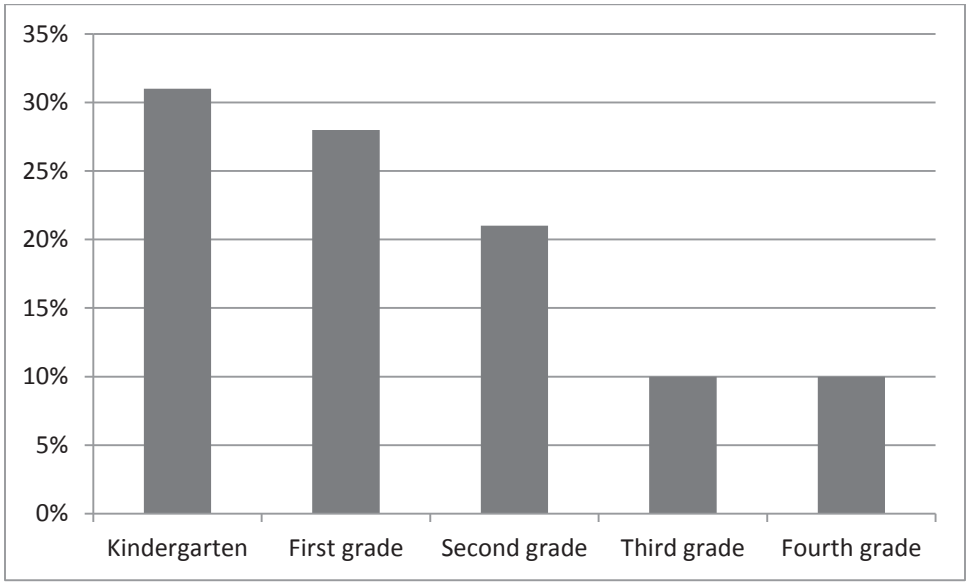

Figure 27. Year Identified TAG. *Notes.* Adapted from data provided by Qualtrics (Qualtrics, 2014, Provo, Utah).

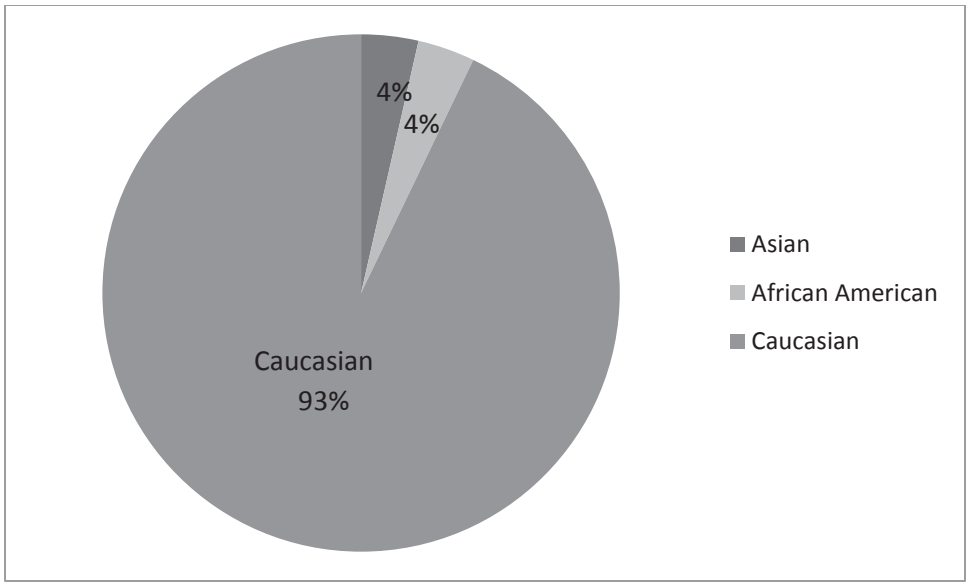

Figure 28. Ethnicity. *Notes.* Adapted from data provided by Qualtrics (Qualtrics, 2014, Provo, Utah).

Research Question 3

Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using focus groups formed from six students at each grade level?

There were six focus groups conducted after analyzing the open-ended interview results. Six students from each grade level at each school were selected for the focus groups from the participant group. Random sampling was employed when choosing students for the focus groups. Focus groups were held at the school during the school day. Focus groups were recorded for accuracy. The sessions were recorded using a small recording device and an IPad. The researcher took notes during the focus groups to verify transcriptions. The researcher conducted all focus groups using the same initial questions (see Appendix B) to ensure the consistency of questioning. The sessions were transcribed at a later time by a state certified regular education teacher, summed, checked, and coded by the researcher and an outside coder (see Appendix H for the complete transcripts). An analysis was made by determining the frequency a word or

phrase was used when students answered the questions. A simple frequency counting method was used to make the determination. The researcher and coder practiced the counting method for phrases using a focus group transcription from a previous study the researcher conducted to establish words and phrases which were grouped into general themes or similar categories. The researcher and coder agreed that identifying the general theme was the priority rather than identifying the specific words. A table with complied themes is shown in Table 16. Table 16 does not include questions which were used to establish relationships and for general conversation with the focus group participants. Following are the questions which were not included with the responses. The table does not include question one which asked students to talk about their interests and hobbies. However, the most common answers were: a) building; b) sports/band; c) reading and/or writing; d) games; e) computer; f) arts and crafts; g) collecting; and h) science. The table does not include Questions: a) 4 (What types of projects do you like to work on?); b) 5 (Do you like to create or invent?); and c) Question 10 (Is there anything else you want to tell me about the Discovery program?). All the responses to Question 4 involved building or constructing some type of model as to the type of projects preferred. Answers to Question 5 about creating or inventing resulted with participants stating they liked to create and invent, resulting in no clear choice between the two choices given. Question 10 asked participants if there was anything else they wanted to relate about their program. The two themes that emerged from this question were: a) students disliked others relying on them; and b) they did not like the teacher making them do the "same strategy over and over again" in pull-out classes. Clustered students liked the challenging activities.

Table 16

General Themes Complied From Focus Group Responses

Questions	Themes Generated		
How do you like to work?	alone 8	partners 5	Small group 15
Why do you like small groups?	Can get help 6	Get along; less arguing 5	Large group is distracting 4
Advantages to being in a cluster class	Having someone the same 6	Being more comfortable 6	Learning together 10
Disadvantages to being in a cluster class	Don't meet as many people 2	Missing classwork 7	Bossy people 4
Good things about being together	Group work 11	Challenging activities 11	Relating to others 3
What are the advantages to being the only gifted in class?	Missing classwork 8	Feel smarter 3	Helping others 7

Note. Questions 1, 3, 4, and 10 are not included because they did not contribute to these types of themes.

The over-arching themes which emerged from the focus groups were: a) TAG students preferred to work in small groups; b) they liked learning together; c) liked having challenging activities; and d) when pulled out for resource they did not like missing classwork.

Research Question 4

Were there significant differences in achievement levels of gifted elementary students in pull-out versus cluster using the CRCT total scores in reading, language arts, mathematics, science, and social studies content areas?

The 2014 CRCT were administered at each school during April of the school year. The gifted resource teachers at each school recorded the students' scaled scores on the coded participant lists. The content scores for reading, English language arts, mathematics, science, and social studies were entered into the SPSS. The total mean scores for each content area and grouping were calculated (see Table 17).

Table 17

CRCT Total Content Mean Scores for Cluster and Pull-out

Program Option	Content Areas									
	Reading		ELA		Math		Social Studies		Science	
	M	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*	*M*	*SD*
Cluster	872.62	16.76	872.68	25.04	877.84	31.11	865.97	27.92	883.54	22.85
Pull-out	884.82*	15.76	879.55	18.29	914.05*	35.62	893.77	26.17	888.09	21.82
Total	877.17	17.31	875.24	22.84	891.34	36.70	876.34	29.70	885.24	22.39

Note. *$p < .05$ *CRCT* (2014).

There were statistically significant two-way interactions between the cluster and pull-out groups on the reading content of the CRCT, $F(1.\ 53) = 7.12$, $p = .010$, *partial* $\eta^2 = .12$ (see Table 18 and Figure 29) and the math content, $F(1.\ 53) = 16.41$, $p = .001$, *partial* $\eta^2 = .24$ (see Table 18 and Figure 30).

Table 18

Mean Differences in Program Option and Content

Content Area	Program Option	*M*	*SE*	*df*	*F*	*p*
Reading	Cluster	872.62	16.76			
	Pull-out	884.82	15.75	1,53	7.12	.010*
Math	Cluster	877.84	31.10			
	Pull-out	914.05	34.62	1,53	16.40	.0005*

Note. *$p < .05$; *CRCT* (2014).

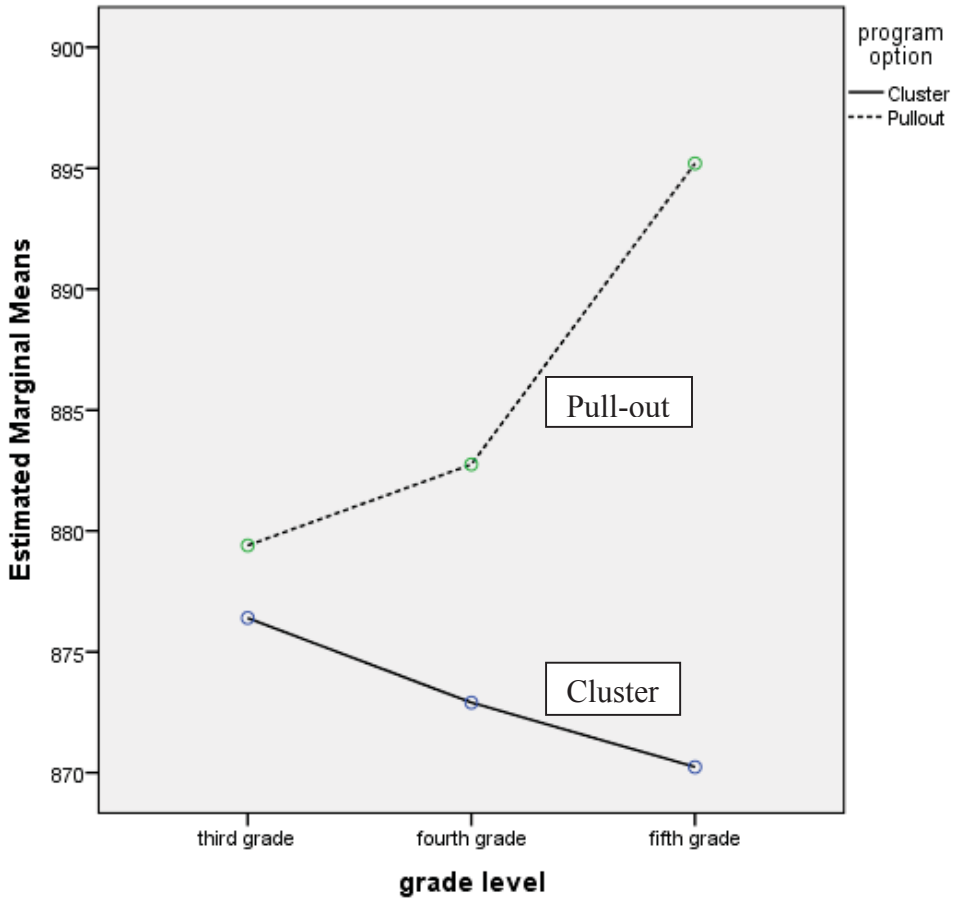

Figure 29. Reading Content Interactions between Groupings.

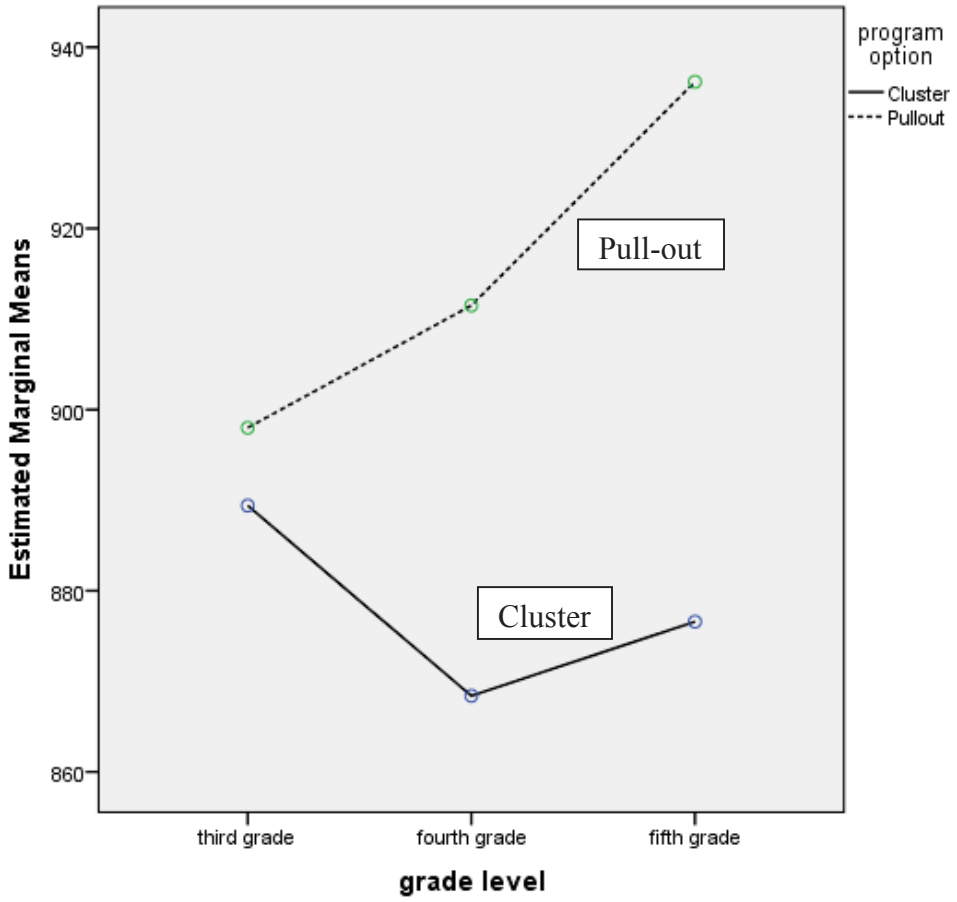

Figure 30. Math Content Interactions between Groupings.

A two-way ANOVA was conducted on the independent variables, grouping options [cluster (n = 37) and pull-out (n = 22)] and grade levels [third (n = 15), fourth (n = 22), and fifth (n = 22)] to examine the dependent variables (content) means (see Table 19) on the CRCT.

Table 19

CRCT Content Mean Scores for Cluster and Pull-out by Grade Level

Group	Content Areas									
	Reading		ELA		Math		Social Studies		Science	
	M	SD	M	SD	M	SD	M	SD	M	SD
3rd										
Cluster	876.40	20.72	869.10	24.04	889.40	38.43	873.30	31.41	876.30	22.36
Pull-out	879.40	17.83	875.80	25.73	898.00	33.34	881.00	35.02	866.20	18.99
4th										
Cluster	872.90	15.86	881.50	35.24	868.40	26.66	855.70	12.23	892.60	15.43
Pull-out	882.75	16.12	883.25	18.05	911.50 *	31.03	886.67 *	14.87	887.67	13.16
5th										
Cluster	870.24	15.30	869.59	17.89	876.59	28.38	867.71	29.81	882.47	25.96
Pull-out	895.20 *	9.31	874.40	10.33	936.20 *	39.73	923.60 *	17.11	911.00 *	20.19

Note. 2014 CRCT scores; *M* = Mean; *SD* = Standard Deviation; * $p < .05$; *CRCT* (2014).

The social studies content was significant for the three grade levels and group options with the grade, $F(2.\ 53) = 4.49$, $p = .016$, *partial* $\eta^2 = .15$; grouping options, $F(1.\ 53) = 19.37$, $p = .001$, *partial* $\eta^2 = .27$; and grade and grouping, $F(2.\ 53) = 3.36$, $p = .042$, *partial* $\eta^2 = .11$ (see Figure 31).

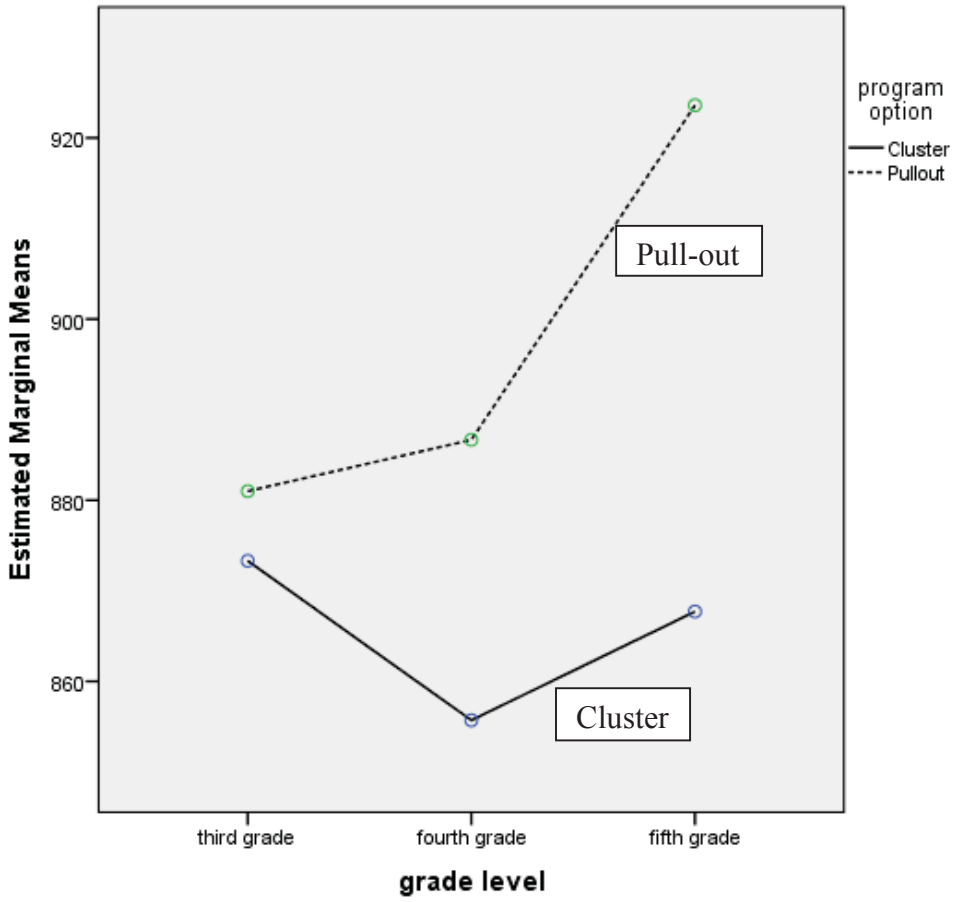

Figure 31. Social Studies Content Interactions between Groupings and Grade Levels.

In the science content there was a statistically significant interaction within the grade levels, $F(2.\ 53) = 5.90$, $p = .005$, *partial* $\eta^2 = .18$ and the grade and grouping, $F(2.\ 53) = 4.05$, $p = .023$, *partial* $\eta^2 = .13$ (see Figure 32). There was no significant interaction for the ELA content.

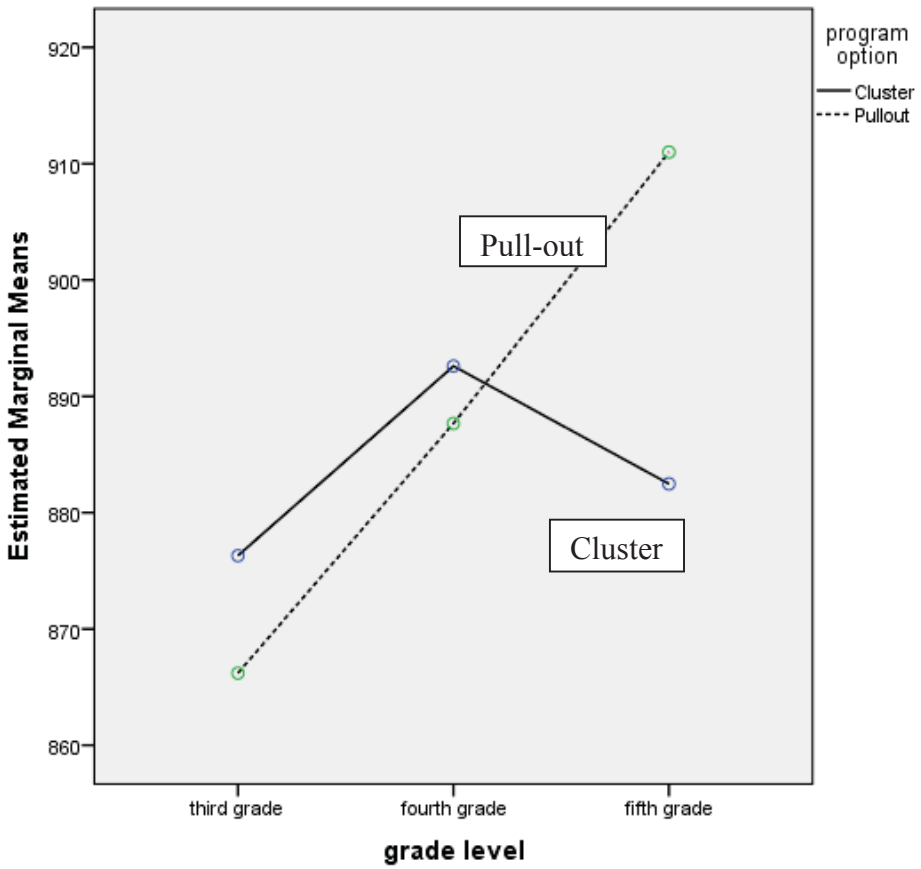

Figure 32. Science Content Interactions between Groupings and Grade Levels.

Between the specific grade levels for fourth and fifth graders the reading content mean scores for fifth graders (M = 895.20, SE = 6.79) in the pull-out group were statistically significantly greater than the fifth graders' scores $F(1, 53) = 8.9$, $p = .004$, *partial* $\eta^2 = .14$ in the cluster group (see Table 20 and Figure 29).

Table 20

Reading Content, Grade Level, and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fifth grade	Cluster	870.24	3.68			.14	
	Pull-out	895.20	6.79	1,53	8.9		.004*

Note. **p* < .05; *CRCT* (2014).

Amongst the students in fourth grade (M = 911.50, SE = 8.68) and fifth grade (M = 936.20, SE = 13.45) pull-out groups their mean scores were statistically significantly greater than the fourth grade $F(1, 53) = 9.96$, $p = .001$, *partial* $\eta^2 = .16$ and fifth grade $F(1, 53) = 13.49$, $p = .003$, *partial* $\eta^2 = .20$ students' in the cluster group for the math content (see Table 21 and Figure 30).

Table 21

Math Content, Grade Level, and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fourth grade	Cluster	868.40	9.51				
	Pull-out	911.50	8.68	1,53	9.96	.16	.001*
Fifth grade	Cluster	876.59	7.29				
	Pull-out	936.20	13.45	1,53	13.49	.20	.003*

Note. *$p < .05$; *CRCT* (2014).

Social studies students in fourth grade (M = 876.67, SE = 7.41) and fifth grade (M = 923.60, SE = 11.49) pull-out groups had statistically significant greater scores than the fourth grade $F(1, 53) = 8.41$, $p = .005$, *partial* $\eta^2 = .14$, and fifth grade $F(1, 53) = 19.41$, $p = .001$, *partial* $\eta^2 = .27$ in the cluster group (see Table 22 and Figure 31).

Table 22

Social Studies Content, Grade Level, and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fourth grade	Cluster	855.70	8.12				
	Pull-out	886.67	7.41	1,53	8.41	.14	.005*
Fifth grade	Cluster	867.71	6.23				
	Pull-out	923.60	11.49	1,53	19.41	.27	.001*

Note. *$p < .05$; *CRCT* (2014).

In the science content, students in the fifth grade pull-out group had a statistically significant greater score, (M = 900.60, SE = 16.04) than the cluster group, $F(1, 53)$ = 7.44, p = .009, *partial* η^2 = .12 (see Table 23 and Figure 32).

Table 23

Science Content, Grade Level, and Program Option

Grade Level	Program Option	*M*	*SE*	*df*	*F*	*partial* η^2	*p*
Fifth grade	Cluster	886.88	8.70				
	Pull-out	900.60	16.04	1,53	7.44	.12	.009*

Note. *p < .05; *CRCT* (2014).

There were outliers in some content areas as assessed by an inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box (see Table 24). These data points were genuine data points and were not removed.

Table 24

CRCT Outliers for Cluster and Pull-out by Grade Level

Grade Level	Program Option	Content Area					N
		Reading	ELA	Math	Social Studies	Science	
3rd	Cluster		2				10
	Pull-out						5
4th	Cluster						10
	Pull-out	1	2				12
5th	Cluster			1	3		17
	Pull-out				2	2	5

Note. Outliers; *CRCT* (2014).

Scores for third, fourth, and fifth graders were normally distributed for the cluster and pull-out groups for science (p > .05). However, the scores for the fifth grade cluster

group were not normally distributed for social studies, math, and ELA. Additionally, the fifth grade pull-out group in reading and the third grade cluster and fourth grade pull-out groups in ELA were not normally distributed as assessed by Shapiro-Wilk's test ($p <$ .05).

To test whether the group combinations were equal, Levene's Test of Homogeneity was used. There was homogeneity of variances, as assessed by Levene's Test of Homogeneity of Variance in reading, math, social studies, and science for the two groups (see Table 25). Assumption of homogeneity was not met for ELA where there was a statistically significant difference.

Table 25

Levene's Test of Homogeneity of Variance

Content Areas	*F*	*p*
Reading	0.46	.807
ELA	2.45	.046 *
Mathematics	0.36	.871
Social Studies	2.31	.057
Science	1.53	.196

Note. *$p < .05$; *CRCT* (2014).

Assessing the studentized residuals for ELA scores yielded no values $\geq \pm 3$. The Normal Q-Q plot for ELA scores showed the data were not too distorted to violate an assumption of normality.

Summarizing the results for research Question 4, a two-way ANOVA was conducted to determine the effects of the grouping options, cluster and pull-out on the mean scores of the content areas of the CRCT for third, fourth, and fifth graders. There was at least one outlier in each content area (see Table 24) assessed as a value greater than 1.5 box-lengths from the edge of the box. The outliers were considered genuine data

points and were not removed. Mean scores were normally distributed ($p > .05$) for science for all three grade levels and both grouping options. The mean scores were not normally distributed for the fifth grade cluster in social studies ($p = .036$), math ($p = .004$), or ELA ($p = .044$). Additionally, the mean scores for fourth grade pull-out in ELA ($p = .009$), third grade cluster in ELA ($p = .047$), and fifth grade pull-out in reading ($p = .006$) were not normally distributed, as assessed by Shapiro-Wilk's test of normality. There was homogeneity of variances, as assessed by Levene's test for equality of variances (see Table 20), reading, math, social studies, and science. The assumption of homogeneity was not met for ELA, ($p < .05$). Between the groups for the content area of reading the pull-out group was statistically significantly greater than the cluster group (see Table 18). Also statistically significantly greater were the pull-out scores in math, versus cluster. However, the difference in ELA and the group options was not statistically significant $F(1, 53) = 0.45$, $p > .05$. There was a statistically significant interaction between reading content of the CRCT, $F(1. 53) = 7.12$, $p = .010$, *partial* $\eta^2 = .12$; math content, $F(1. 53) = 16.41$, $p = .001$, *partial* $\eta^2 = .24$; social studies for the three grade levels and group options with the grade, $F(2. 53) = 4.49$, $p = .016$, *partial* $\eta^2 = .15$; grouping options, $F(1. 53) = 19.37$, $p = .001$, *partial* $\eta^2 = .27$; and grade and grouping, $F(2. 53) = 3.36$, $p = .042$, *partial* $\eta^2 = .11$; and in science within the grade levels, $F(2. 53) = 5.90$, $p = .005$, *partial* $\eta^2 = .18$ and the grade and grouping, $F(2. 53) = 4.05$, $p = .023$ *partial* $\eta^2 = .13$. There was no significant two-way interaction between grade and grouping on the mean ELA content.

Chapter V

SUMMARY AND DISCUSSION

Summary

Grant and Piechowski (1999) claimed many TAG program models had not addressed the experiences or perceptions of the students when designing programs of instruction. The NAGC (2011) posited educators would better serve TAG students in their program models and grouping options if they discovered the TAG students' perceptions for a particular model. This study sought to discover what the perceptions of elementary TAG students in two rural southern elementary schools were in two different program models, cluster and pull-out, using a perception profile, on-line open-ended structure interviews, and focus groups. Achievement scores were compared between the two groups and grade levels to discover any differences between the models. Using the *Harter Self-Perception Profile for Children* (Harter, 2012), students were surveyed about their perceptions on six subscales: a) Scholastic Competence; b) Social Competence; c) Athletic Competence; d) Physical Appearance; e) Behavioral Conduct; and f) Global-Self-Worth. The CRCT was used to explore any differences in achievement scores for the grade levels and group options on five content areas: a) reading; b) language arts; c) mathematics; d) social studies; and e) science.

Discussion

Research Question 1

Were there significant differences in the global self-worth (GSW) perception or the sub-scales of self-concept perception (SC = Scholastic Competence; SoCo = Social

Competence; AC = Athletic Competence; PA = Physical Appearance; and BC = Behavioral Conduct) of gifted elementary students in cluster versus pull-out classrooms as measured using the *Harter Self-Perception Profile for Children*?

Perceptions of gifted elementary students in cluster and pull-out classrooms were measured using the *Harter Self-Perception Profile for Children* (Harter, 2012) at the beginning and end of the study. Students were surveyed about their perceptions on six subscales: a) Scholastic Competence; b) Social Competence; c) Athletic Competence; d) Physical Appearance; e) Behavioral Conduct; and f) Global-Self-Worth. The scores were tabulated and entered in SPSS and analyzed. The means for each grade level and subscale were compared. The pull-out group had significantly higher means in all subscales but, Behavioral Conduct (see Table 5) as compared to the cluster group except for third grade cluster students. As to why there were no differences in the means for the third grade group, Meijer et al. (2008) found in their evaluation of the *Harter Self-Perception Profile for Children* (Harter, 2012) that young children (8-9 years) might not have understood the meanings of the questions or were unclear as to how to fill out the questionnaire. In this study the researcher took steps to alleviate misunderstandings on filling out the questionnaire by using repeated examples, explaining any misunderstandings, reading the questions, and having the gifted resource teacher in the room during the profile's first few questions to help check for understanding. Conducting a pretest and posttest with results showing no differences in the means for the third grade group, the researcher suggests that the third graders may not have understood the questions' meanings due to their young ages.

There were statistically significant two-way interactions between all the subscales and the cluster and pull-out groups. Grouping options had a statistically significant effect on the perception scores of particular grade levels and subscales. The fourth grade pull-out group's Scholastic Competence scores (see Table 9 and Figure 9) and Social Competence scores (see Table 10 and Figure 10) were significantly greater than the fourth grade cluster group's. This was true, as well, for the fifth grade pull-out group's scores which were significantly higher than the cluster group's in Scholastic Competence (see Table 9 and Figure 9). The Physical Appearance (see Table 11 and Figure 11) subscale data revealed statistically significantly greater results for scores of fourth and fifth grade pull-out groups and the fourth and fifth grade cluster groups. Fifth grade pull-out students' scores were significantly greater in Behavioral Conduct (see Table 12 and Figure 12) and Global Self-worth (see Table 13 and Figure 13) than the fifth grade cluster group. Melser (1999) found fourth graders' self-esteem scores decreased when enrolled in gifted self-contained classes, in contrast to those enrolled in heterogeneous classes. Melser suggested teachers of TAG students use flexible grouping and cooperative learning to combat the decrease in self-esteem. Based on the results of the *Harter Self-Perception Profile for Children* (Harter, 2012), interviews (Figure 33), and focus groups (see Table 16), this researcher suggests that for this study the TAG students enrolled in the pull-out groups had higher perception scores than the TAG students in cluster groups because they were enrolled in mixed ability classes with only one other TAG student and could easily recognize the differences between themselves and their grade level peers.

Some of the subscales (see Table 14) had a few outliers in the data as assessed by an inspection of the boxplots for values greater than 1.5 box-lengths from the edge of the

box. Outliers can have harmful effects if not checked or dealt with. After checking for data entry errors and measurement errors, the researcher determined the outliers were most likely genuinely unusual data points. The range of scores for the subscales was one to four and it was reasonable to make an assumption that a participant would score a four for a particular subscale or on the other end a score of one. The researcher checked the pretest and posttest to determine if the participants with outliers' scores had changed drastically to arouse suspicion of an unusual occurrence. A two-way ANOVA was conducted using the outliers and another was run replacing the outliers with the next largest value. The results of the two were compared and there was no sufficient difference that would alter the conclusion. Hence, the outliers were included in the data. Shapiro-Wilk's test was used to assess whether the scores were normally distributed. A visual inspection of the histograms the Normal Q-Q plots were used also. Levene's Test of Homogeneity of Variance was used to assess for equal variance (see Table 15).

This study found third, fourth and fifth grade students enrolled in pull-out groups scored higher on their self-perceptions in all areas except Behavioral Conduct (see Figure 8). Although there were no significant differences between the third grade groups, the third grade cluster group scored higher than the pull-out group. Their young age may explain that they were not able to perceive differences amongst themselves and their peers. Examining the interaction of the Behavioral Conduct (see Figure 8) subscale and in particular the decrease in self-esteem means from the third grade group to the fourth grade group in School B, the researcher suggests that although the model of delivery (cluster) was the same model for the third graders as the fourth graders they in fact moved to a different facility and different resource teacher in the fourth grade.

Adjusting to a new school and new teacher might explain a difference in perception in the behavior subscale. The researcher suggests that the rise in perception in behavior for the pull-out group was possibly linked to maturity and understanding of the rules of behavioral conduct, which is supported in the study conducted by Dai et al., (2012).

A generalization could be made based on the results of this study that students in pull-out programs have a higher perception of themselves than TAG students in cluster programs. This researcher suggests there is more to be considered. Statistically, the means of the subscales are significant. However, practically, the scores are very close together. The scale is a four point scale. When one looks at the actual differences between two means (see Table 5) in a subscale, they are miniscule in practice. For example in the Social Competence subscale the pull-out group's mean ($M = 3.33$) and the cluster group's mean ($M = 2.97$) is significant at $p < .05$ however, when working with students in a classroom the differences between the students would most likely not be noticeable. The effect sizes for the Social Competence subscale ($d = .53$) and the Behavioral Conduct subscale ($d = .29$) are in actuality small to moderate.

The results of this study are consistent with Delcourt et al. (2007) whose results showed pull-out programs had benefits for students in the areas of self-esteem, attitudes, and competence. A pull-out program can be a worthwhile option for educators designing instruction for the TAG students. Gubbins (2013) cautioned that the actual practices being used in the pull-out program be examined closely for best practices as pull-out programs are a part-time option.

Research Question 2

Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using an on-line structured interview with open-ended questions?

The interviews were presented to participants online using Qualtrics. The open-ended interview was sent to an email address provided to the researcher from the parent or guardian. There was a 77% return rate of completed interviews. During the focus groups 12 participants were randomly selected to be interviewed using the open-ended interviews. Two participants were selected from each focus group. The numerical data for the 12 selected participants were analyzed using SPSS. The demographic data were included for grade levels, ages, gender, and grade students were identified TAG (see Figures 14 through 17). The questions and responses were grouped to look for patterns. The responses for any students who had experienced a cluster class responded: a) they liked working together; b) they would ask each other for help; c) they did not feel different because they were in a group together; d) content was differentiated and advanced; and e) they enjoyed doing projects. Students who had ever experienced a pull-out program responded: a) resource room projects were fun; b) content was challenging; c) students felt left out or missed work when leaving the regular classroom; d) students liked being with their peers; and e) they felt they learned more in the resource room. The similar themes between the two groupings were: a) TAG students enjoyed working together; b) they enjoyed challenging projects and saw them as fun; c) they did not like being singled out.

The researcher did not find the responses of either group surprising. Beisser et al., (2013) found TAG students rated being with their friends as the most important aspect of

learning. Having fun and working in small groups were the next two important aspects to their learning. Specific responses for fun times and projects were science experiments, board games, physical activities, projects requiring hands-on activities, and computer projects. If this researcher were to replicate this study, the interview questions would include specific examples for students to explain their conception of fun and challenging projects. A belief of this researcher is that a hyper-attention to achievement and high expectations from parents and teachers caused TAG students to worry about missed lessons when they were out of the classroom. To probe further into the response about worrying about missing work, the researcher spoke informally to each resource teacher and a teacher from each grade level at both schools. Both resource teachers said that administrators have advised teachers that regular classwork missed while students were attending TAG classes was not to be assigned as work to be made up. However, in practice, the regular classroom teachers said they sometimes assigned missed work as homework or extra work. Additionally, the regular classroom teachers at School A with the pull-out group said that there were times they forgot the TAG students were out of the room and they switched subjects which caused the TAG students to miss a content course that day.

An unexpected response was expressed in Question 8: *What do you do when your teacher gives you school work or tasks which are challenging or hard for you?* Of the 12 responses, eight students responded they would ask for help. Some said they would try first or ask another gifted student for help. However, the majority responded they would ask the teacher for help. This researcher had the expectation that the responses would include the students saying they would use learned strategies to solve problems. This

would be another question which the researcher would expand to probe more for information were the study to be replicated.

This study's results expressed through the interviews that TAG students prefer working on challenging activities in small groups with others of similar intellectual ability. Cluster grouping TAG students can eliminate some of the apprehensions TAG students had when leaving for the resource room. Being clustered assured the students they would not miss the announcements, papers to go home, be kept late and miss part of lunch, miss a content area, or miss instruction in other areas. TAG students enrolled in both groupings can experience the preferences the participants expressed through programs designed and taught with best practices. Shields (2002) explored the perceptions and attitudes of students in both groups and found the TAG students' self-perception experiences were positive. When pull-out programs are designed with the TAG student in mind, those students do not feel singled out when leaving the regular classroom and do not perceive they have missed or been left out of instruction in their regular education classroom. The findings from the study are consistent with the studies of Brighton and Wiley (2013) and Yang et al. (2012) who found one of the benefits to using a pull-out program is that students were able to work with students of like abilities. As Shields (2002) found, this researcher also received positive comments (see Figure 33) from both groups of students:

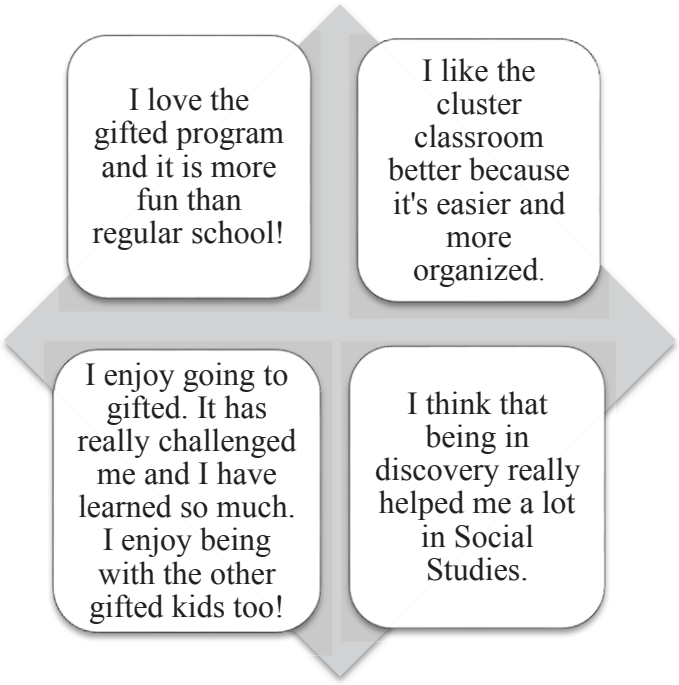

Figure 33. Interview Comments from Participants in Pull-out and Cluster Groups.

Research Question 3

Were there differences in the perceptions of gifted elementary students in pull-out versus cluster using focus groups formed from six students at each grade level?

Focus groups were used to garner the perceptions of participants with the same backgrounds interacting in conversation with each other. While speaking with each other and the researcher, the participants were able to expand or improve their thoughts through participating with others during the focus group. The focus groups were a good way to begin to form codes and general themes for the responses. The participants enjoyed the social interaction and the group discussions provided a way for the participants to better explain their perceptions. There were six general themes recognized by the researcher and coder.

They were:

- How you like to work
- Why do you like small groups
- Advantages to a cluster class
- Disadvantages to a cluster class
- Good things about being together
- Advantages to being the only gifted student in class

For the first general theme "How you like to work," "small groups" garnered the most responses with "working alone" in second, and "partners" third. Reasons for wanting to "work in small groups" had three answers with no clear majority: a) can get help; b) get along; less arguing; and c) large group is distracting. The majority response to advantage to cluster grouping was "learning together." The next two answers tied and were "having someone the same" and "being more comfortable." Disadvantages to clustering were "missing classwork," "bossy people," and "don't get to meet as many people" in that order of importance. For the theme "good things about being together," the top response was split equally between "group work" and "challenging activities" with "relating to others" coming in a distant third. The last theme, "advantages to being the only gifted in class" did not have a clear leader for top answer. However, "missing classwork" and "helping others" were the top two answers and "feel smarter" garnered three responses.

The focus group data results yielded several over-arching themes: a) TAG students liked to work and be together when learning; b) TAG students preferred to work in a small group; c) TAG students liked to do projects and experiments; and d) TAG students did not like to be singled out or pulled out of class.

The results from this study were consistent with Beisser et al. (2013) who found TAG students ranked being with a few friends as the highest activity. Large group activities were the least chosen learning group in their study as was the same in this study (see Table 16). According to French et al., (2011) TAG students preferred working with other students. This study was consistent with French et al. and their findings. The interviews and focus groups found that the students preferred working with a partner or small group most often. What did the TAG voices say about working together (see Figure 34)?

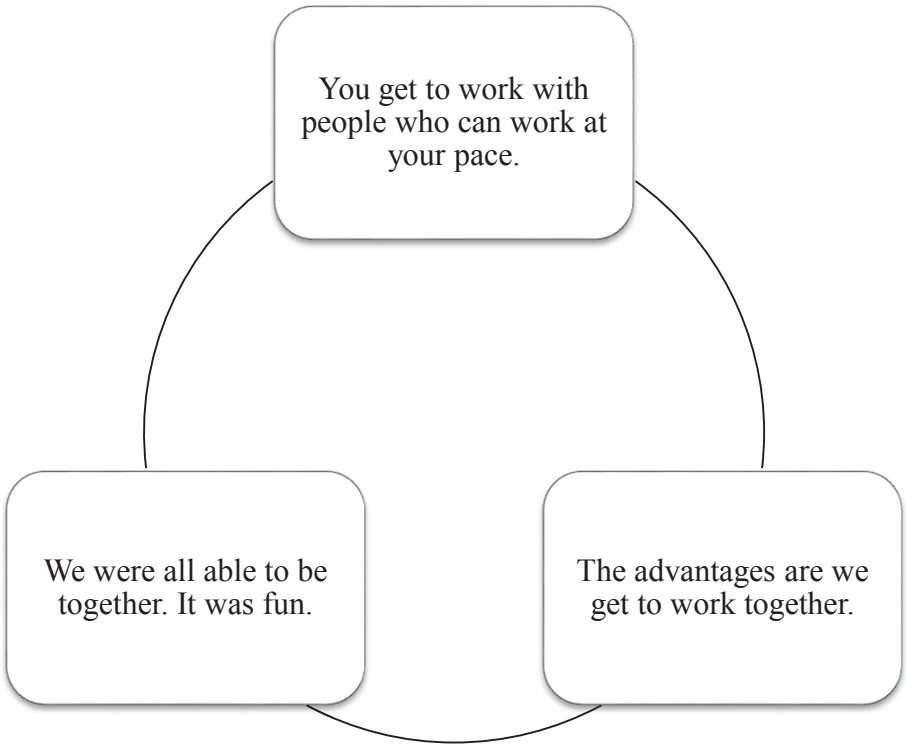

Figure 34. Comments from Interviews and Focus Groups.

The use of focus groups and interviews helped this researcher draw stronger conclusions based on evidence as Maxwell (2005) suggested. Asking the participants for their perspectives helped to control misunderstandings and any bias by the researcher

(Maxwell, 2005; Merriam, 2002; Patton, 2002). Information garnered from the interviews and focus groups are applicable to both groupings for TAG students. Educators contemplating using either pull-out or cluster groupings should consider that TAG students enjoy being challenged, working on projects with their intellectual peers, and they do not want to be singled out from their regular classmates or miss additional instruction when leaving the classroom.

Research Question 4

Were there significant differences in achievement levels of gifted elementary students in pull-out versus cluster using the Criterion Referenced Competency Tests (CRCT) total scores in reading, language arts, mathematics, science, and social studies content areas?

There were statistically significantly greater mean scores for content areas in cluster and pull-out groups (see Table 17 and 18). Between the groups for the content area of reading the pull-out group was significantly greater than the cluster group. Also significantly higher were the pull-out scores in math versus the cluster. However, the difference in ELA and the group options was not statistically significant.

Data for the content areas of reading, mathematics, social studies, and science (see Table 19) showed differences for the two grouping options for fourth and fifth graders with the pull-out group having greater achievement scores. Further exploration yielded a statistically significant interaction in reading (see Figure 29), math (see Figure 30), and social studies (see Figure 31) for the three grade levels and group options within the grade, grouping options, and grade and grouping, and in science (see Figure 32) within the grade levels, and the grade and grouping. There was no significant interaction for the ELA content. The mean difference between reading scores (see Table 20) for fifth

graders in the pull-out group were significantly greater than the fifth graders' scores in the cluster group. Fourth graders' and fifth graders' mean scores in the pull-out group were significantly higher than the fourth graders' and fifth graders' in the cluster group for the math (see Table 21) and social studies (see Table 22) content. In the science (see Table 23) content, students in the fifth grade pull-out group had a significantly greater score, than the cluster group.

The content areas had some outliers as assessed by an inspection of a boxplot for values greater than 1.5 box-lengths from the edge of the box (see Table 24). The researcher and resource teachers examined the scores with the outliers and determined the scores were genuine data points and were not removed. Shapiro-Wilk's test for assessing the assumption of normality was run, as was Levene's test for Assumption of Homogeneity of Variance.

The results of this study are consistent with Tieso's (2005) study in which TAG students who had been grouped within a class, grouped between classes, or had whole class grouping showed results in achievement. Included in Tieso's (2005) results were that the use of grouping with some revision of the curriculum yielded significant results. Proven more effective were the practices of differentiating the curriculum to include more rigor and quality of assessments, instructional methods and strategies, and realigning the content. Probing the mean differences for the third grade groups, the statistical differences in the actual numerical scores are quite small in practicality. As stated previously, the third grade students in School B attended school in another facility with a different resource teacher. It is not known as to whether their instruction was

content standards based or enrichment based as was the fourth and fifth graders' instruction.

The researcher, using the results from this study suggests that explicit teaching of content leads to higher academic achievement. In this study, the pull-out group received explicit teaching in the content area of science from the gifted resource teacher on a daily basis. The regular education classroom teacher provided explicit teaching in the other content areas. However, for the cluster grouped participants, the gifted resource teacher provided an enrichment curriculum taught through projects which were not aimed at any one specific content area. The resource teacher provided services one day a week for the entire school day. It was not evidenced exactly how the clustering teachers delivered the content standards to the students. The researcher was unable to determine the cause of the fourth grade cluster groups' decrease in scores for the reading, math, and social studies areas. It is noted that the 2014 *CRCT* used the new Georgia Performance Standards and many schools experienced decreases in scores. However, in the science area, the fourth grade cluster group experienced an increase and the mean score differences between cluster (M = 892.60, SE = 15.43) and pull-out (M = 887.67, SE = 13.12) were much closer to each other and not statistically significant. In the science content, the fourth grade cluster group had a higher mean score than the pull-out group. Schools designing programs with academic achievement as a high priority would want to design and implement a program with content and enrichment. Another aspect schools need to consider is the amount of time TAG students are served. School A's resource teacher served the TAG students on a daily basis which is conducive to teaching a content area and being consistent with standards. In contrast, School B's resource

teacher served the TAG students one day a week for the entire day. Locating a school which uses the one day a week model, but teaches the content area standards, would be another piece of evidence to aid schools in determining programming for TAG students.

Conclusions

Showing that TAG programs have a positive impact on students continued to be not only important for the students, but even more so with students' growth and achievement tied to teacher effectiveness and evaluation. The programs designed for the TAG student must highlight the direct relationship from growth to the program option (VanTassel-Baska, 2006). The indications from this study led the researcher to see there is a relationship between academic achievement and perception. In this study the pull-out group had higher perception scores and higher achievement scores compared to the cluster group. However, one must remember that a TAG student is not necessarily gifted in all areas and it is difficult at best to generalize that all students in pull-out models would have higher achievement scores than TAG students in cluster models. In this study, the participant's area of giftedness was not identified. How is the TAG student's giftedness determined? Exploring the eligibility requirements and qualifications of being gifted is important to identify when attempting to determine relationships between achievement and perception in regards to program options. The researcher must ask, does the student's eligibility, determined by Option A or B, in this study, make a difference in achievement or perception?

A differentiated curriculum, strategic teaching methods, and flexible grouping were found by Tieso (2005) to have significant effects in achievement and an increase in achievement with students. Through informal observations and conversations with the

gifted resource teachers, gifted cluster teachers, and the participants, the researcher concluded that a differentiated curriculum within the regular classroom (cluster classes) was not evident even though the gifted resource teacher said the lesson plans sometimes reflected a differentiation. Additionally, the students' comments during focus groups and interviews indicated they were not receiving differentiated curriculum (see Figure 35).

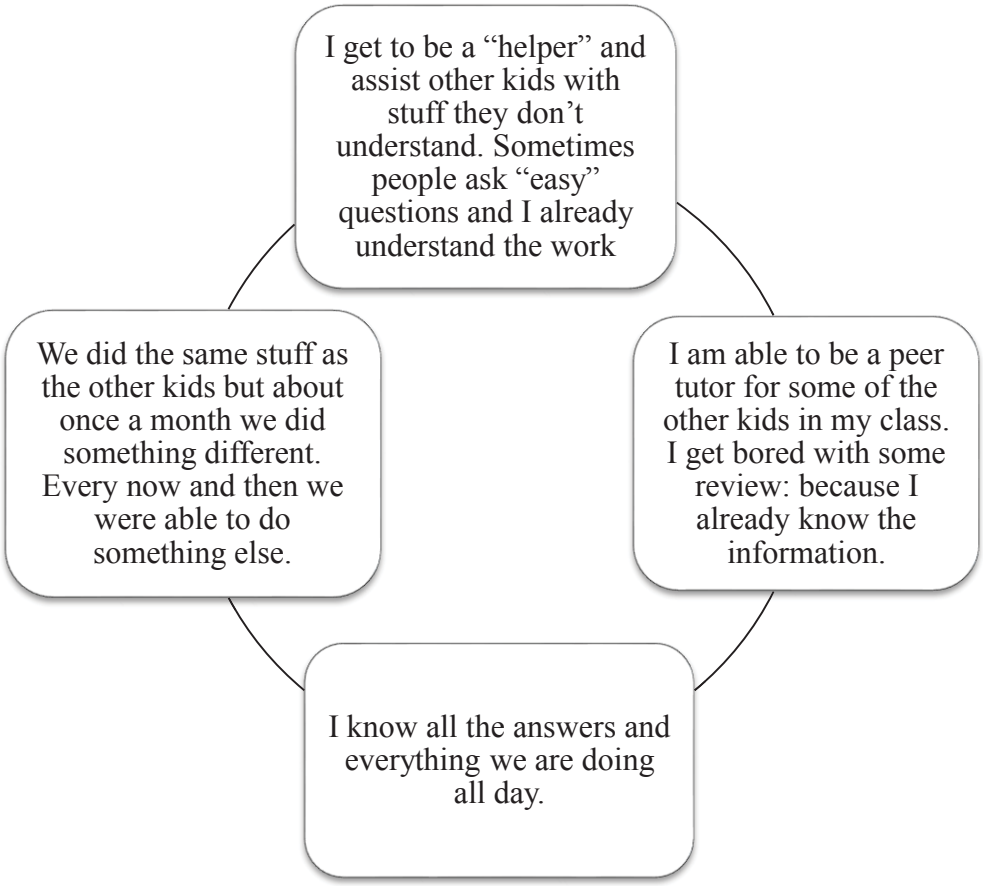

Figure 35. TAG Students' Comments from Interviews and Focus Groups.

The resource teacher at the cluster school related that some of the gifted cluster teachers grouped the students. However, the groupings did not involve differentiation of the curriculum beyond using a faster pace with the same curriculum and materials. Cluster grouping as it was designed to be used would be of benefit to the TAG student after analyzing the perceptions of the TAG students in this study. In support of

Winebrenner's (2001) and Gentry's (1999) studies which reported measurable positive outcomes of clustering gifted students, this study could be extended to include only clustered classes in which the teachers implemented differentiated curriculum for the TAG student.

Additionally, the results from this study were consistent with Winebrenner's (2001) and Gentry's (1999) findings that clustered students enjoyed the consistent interaction with their intellectual peers. The voices of the TAG students were heard (see Figure 36).

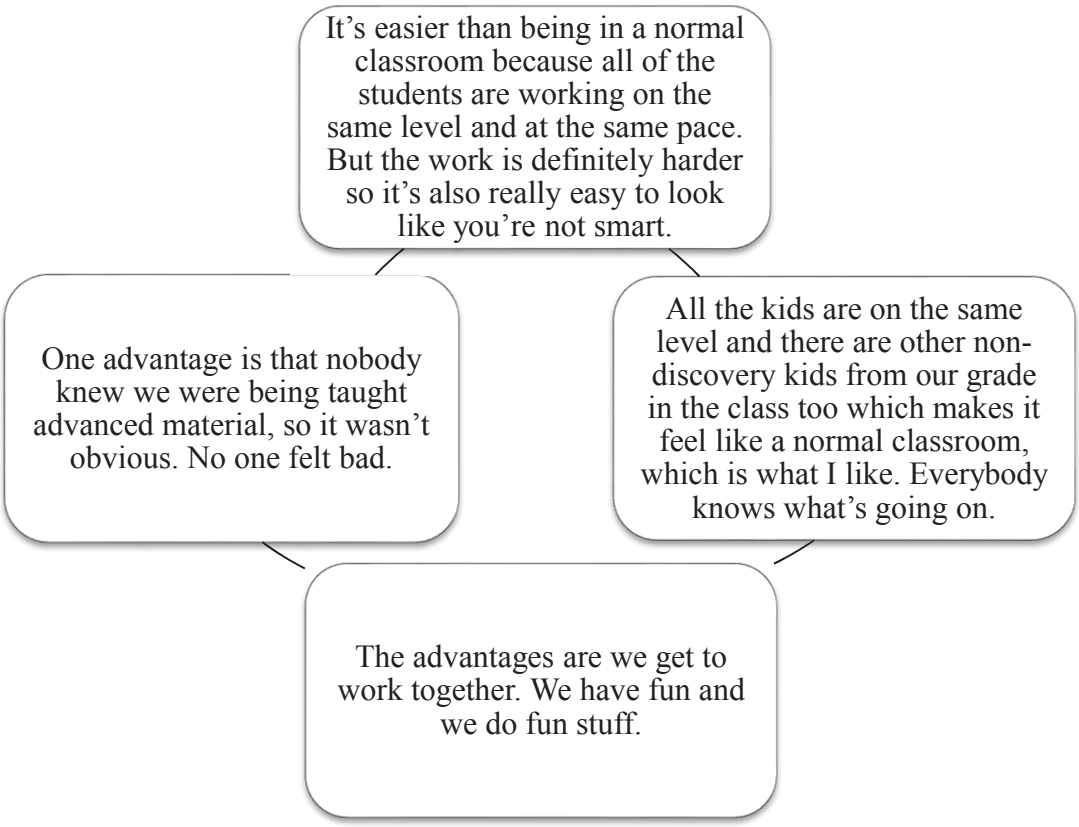

Figure 36. TAG Students' Comments about Cluster Classes.

Recommendations

Gentry (1999) found that students' achievement class-wide increased amongst the students participating in the school cluster group program. A study designed to explore

gains of all the students, TAG, bright students not identified TAG, students meeting standards, and students not meeting standards in cluster classrooms would be of benefit for program designers at the district and school levels. Exploring the possible relationships between the social skills, life skills, and inclusive interdisciplinary across the board skills amongst cluster and pull-out programs rather than achievement would benefit districts and schools.

Of importance is the timing of the administration of the perception profile. There should be some passage of time between the first administration at the beginning of the study and the last administration should not be given again until some time has passed. The perception profiles in this study were administered too closely together to show any real differences.

Do pull-out grouped TAG students have greater mean scores on non-academic subscales because they are not grouped with their intellectual peers? As a point of discussion the researcher identified only three subscales in the perception profile where the means were below 3.0. These all were in the cluster group. All of the cluster grade levels had mean scores greater than 2.0, but below 3.0 in Athletic Competence, third and fourth graders had mean scores greater than 2.0, but below 3.0 in Social Competence, and fourth and fifth graders mean scores were also greater than 2.0 but, below 3.0 in Physical Appearance. Exploring the possibility of a relationship between students and achievement and the non-academic subscales would be interesting with the cluster and pull-out program options. A different perception profile could be used to reflect more of the program option and less about the student.

This study could be replicated with another cluster program and pull-out group. However, it would be important and recommended that the researcher carefully study the claims of cluster teachers and ensure that the cluster teacher was differentiating the curriculum and not just grouping students to teach the same material or use the same pace. A weakness of this study was not determining the exact model of clustering being implemented at School B. The researcher expected, based on the descriptions from the curriculum director, to find the participants at School B to be clustered in their regular classrooms and not served additionally with an enrichment pull-out model. Participants' responses to questions during interviews and focus groups might be different.

A recommendation from this study would include collecting data of TAG students using the Georgia Milestones Assessment System (Georgia Department of Education, 2014). The Georgia Milestones are end of grade assessments for students in grades 3 through 8. These assessments will be implemented in spring 2015. The assessments are written for the content areas: language arts (includes reading, language arts, and writing in one measure), mathematics, social studies, and science. The Georgia Milestones replaced the CRCT, end of course tests and the Writing Assessments. According to the GaDOE (2014) the assessments are designed as a single formative assessment to show student growth. The Georgia Milestones included a number of constructed response items which will require hand scoring. It is important to mention that the students enrolled in the pull-out grouping used in this study were provided instruction in science using the Georgia Performance Standards. The TAG students enrolled in the cluster model were instructed using an enrichment model which was not content specific but focused on interdisciplinary, critical and creative thinking skills, problem solving, research, and

technology. For example the fifth graders in the cluster classes researched a place of interest, wrote a research paper about the place, designed a brochure cover picture, and produced a book compiled with the class' reports. The book won a national award and was bound and published. Results from the data would add to the knowledge base of best practices for the TAG students and provide educational leaders more complete information when designing programs or selecting models of instruction.

Generally, it appears from this study that TAG students liked working together, wanted to be challenged, and wanted fun projects. TAG students needed differentiated curriculum and pacing and had high self-perceptions. Students receiving explicit content instruction seemed to have higher achievement. Differentiation is important to the TAG student, but teachers do not think to differentiate because they do not think the TAG students need differentiation (Plucker et al., 2010). Reis and Renzulli (2009) found that IQ is outdated as the only precursor to giftedness. States must look at eligibility for TAG students which are not limited to only IQ and then determine a program based on the students' gifted areas.

Departmentalization of content areas is becoming a trend within elementary schools. Studying the effects of grouping TAG students together for differentiation purposes within content areas will be important when coupled with a TAG student's area of giftedness, their achievement, and perceptions.

In the ideal world, teachers would know what each student's area of giftedness was and address that area in the student's educational plan. The TAG students would be clustered together and instruction would be differentiated throughout the school day.

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APPENDIX A

On-line Open-ended Structured Interview Questions

Appendix A

On-line Open-ended Structured Interview Questions

You do not have to answer any questions that you do not want to answer. You will not be penalized for not answering the questions.

If at any time you want to drop out of the research study you may do so without being penalized.

A cluster model is when there are all or almost all of the gifted students in your grade in the same homeroom. You stay in your homeroom all day. You might go to the gifted teacher's room one day a week for special lessons, but you typically stay with your homeroom teacher all day with the other gifted students.

I have experienced time in a gifted cluster classroom.

- never
- one year
- two years
- three years or more

There are other gifted students in my homeroom class.

- none
- 1
- 2
- 3 or more

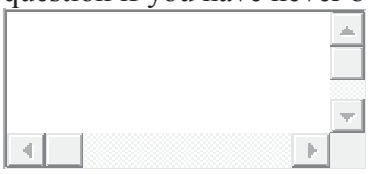
A pull-out model is a homeroom class which has one to three gifted students in the homeroom. You leave with all the other gifted students in your grade to go to the gifted teacher's room for one class a day.

Since I have been identified gifted, I have received services in a pull-out model.

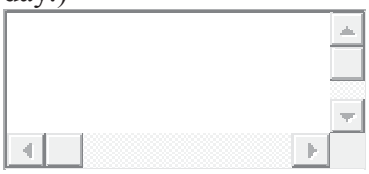
- never
- one year
- two years
- three years or more

A pull-out classroom has only one to three gifted students in your homeroom and you leave every day to go to the gifted teacher's classroom for class once a day.

Describe your experiences in a pull-out classroom? Describe your typical day. (Skip this question if you have never been in a pull-out classroom.)



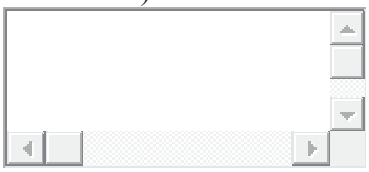
What are the advantages and disadvantages to being the only (or one other) gifted student in your homeroom?
(Skip this question if your homeroom has always had more than three gifted students all day.)



A cluster classroom has from 3-10 other gifted students in the homeroom all day. You might go to the gifted teacher's room for special lessons once a week, but you typically stay with your homeroom teacher all day.

What are your experiences in a gifted cluster classroom? Describe your typical day. (Skip this question if you have never been in a cluster classroom.)

What are the advantages and disadvantages to being in a cluster classroom with a group of gifted students all day? (Skip this question if you have never been in a cluster classroom.)



What do you do when your teacher gives you school work or tasks which are challenging or hard for you?

Do you have any comments or experiences you would like to tell me about?

I am in _____.

- third grade
- fourth grade
- fifth grade

I am a _____.

- female
- male

How long have you been identified as a gifted student?

- Since I was in Kindergarten
- Since I was in 1st grade
- Since I was in 2nd grade
- Since I was in 3rd grade
- Since I was in 4th grade
- Since I was in 5th grade

I am _____years old now.

- 8 years old
- 9 years old
- 10 years old
- 11 years old

I consider myself to be _____.

- Latino
- Asian
- African American
- Caucasian

APPENDIX B

Focus Group Questions

Appendix B

Focus Group Questions

1. What are your interests and hobbies? Are you able to work with your hobbies and interests at school?
2. Do you like to work alone, in small groups, or with a larger group?
3. What types of projects do you like to work on? Please list some examples.
4. Do you like to create or invent things? Stories? Plays? Music? Poems?
5. What do you think are advantages to being in a cluster?
6. What are the disadvantages?
7. What are good things about being together?
8. What are good things about being the only gifted student in a class?
9. Is there anything else you would like to tell me about your experiences with discovery?

APPENDIX C

Harter Self-Perception Profile for Children

Appendix C

Harter Self-Perception Profile for Children

What I Am Like

Name_____ Age____ Birthday _____ ☐ Boy ☐ Girl
Month Day (check one)

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
			Sample Sentence				
a.	☐	☐	Some kids would rather play outdoors in their spare time	**BUT**	Other kids would rather watch T.V.	☐	☐
1.	☐	☐	Some kids feel that they are very good at their school work	**BUT**	Other kids worry about whether they can do the school work assigned to them	☐	☐
2.	☐	☐	Some kids find it hard to make friends	**BUT**	Other kids find it pretty easy to make friends	☐	☐
3.	☐	☐	Some kids do very well at all kinds of sports	**BUT**	Other kids don't feel that they are very good when it comes to sports	☐	☐
4.	☐	☐	Some kids are happy with the way they look	**BUT**	Other kids are *not* happy with the way they look	☐	☐
5.	☐	☐	Some kids often do not like the way they behave	**BUT**	Other kids usually like the way they behave	☐	☐
6.	☐	☐	Some kids are often unhappy with themselves	**BUT**	Other kids are pretty pleased with themselves	☐	☐
7.	☐	☐	Some kids feel like they are just as smart as other kids their age	**BUT**	Other kids aren't so sure and wonder if they are as smart	☐	☐
8.	☐	☐	Some kids know how to make classmates like them	**BUT**	Other kids don't know how to make classmates like them	☐	☐
9.	☐	☐	Some kids wish they could be a lot better at sports	**BUT**	Other kids feel they are good enough at sports	☐	☐
10.	☐	☐	Some kids are happy with their height and weight	**BUT**	Other kids wish their height or weight were different	☐	☐
11.	☐	☐	Some kids usually do the right thing	**BUT**	Other kids often don't do the right thing	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
12.	☐	☐	Some kids don't like the way they are leading their life	BUT	Other kids *do* like the way they are leading their life	☐	☐
13.	☐	☐	Some kids are pretty slow in finishing their school work	BUT	Other kids can do their school work quickly	☐	☐
14.	☐	☐	Some kids don't have the social skills to make friends	BUT	Other kids do have the social skills to make friends	☐	☐
15.	☐	☐	Some kids think they could do well at just about any new sports activity they haven't tried before	BUT	Other kids are afraid they might not do well at sports they haven't ever tried	☐	☐
16.	☐	☐	Some kids wish their body was different	BUT	Other kids like their body the way it is	☐	☐
17.	☐	☐	Some kids usually act the way they know they are supposed to	BUT	Other kids often don't act the way they are supposed to	☐	☐
18.	☐	☐	Some kids are happy with themselves as a person	BUT	Other kids are often not happy with themselves	☐	☐
19.	☐	☐	Some kids often forget what they learn	BUT	Other kids can remember things easily	☐	☐
20.	☐	☐	Some kids understand how to get peers to accept them	BUT	Other kids don't understand how to get peers to accept them	☐	☐
21.	☐	☐	Some kids feel that they are better than others their age at sports	BUT	Other kids don't feel they can play as well	☐	☐
22.	☐	☐	Some kids wish their physical appearance (how they look) was different	BUT	Other kids like their physical appearance the way it is	☐	☐
23.	☐	☐	Some kids usually get in trouble because of things they do	BUT	Other kids usually don't do things that get them in trouble	☐	☐
24.	☐	☐	Some kids like the kind of person they are	BUT	Other kids often wish they were someone else	☐	☐

	Really True for me	Sort of True for me				Sort of True for me	Really True for me
25.	☐	☐	Some kids do very well at their classwork	BUT	Other kids don't do very well at their classwork	☐	☐
26.	☐	☐	Some kids wish they knew how to make more friends	BUT	Other kids know how to make as many friends as they want	☐	☐
27.	☐	☐	In games and sports some kids usually watch instead of play	BUT	Other kids usually play rather than just watch	☐	☐
28.	☐	☐	Some kids wish something about their face or hair looked different	BUT	Other kids like their face and hair the way they are	☐	☐
29.	☐	☐	Some kids do things they know they shouldn't do	BUT	Other kids hardly ever do things they know they shouldn't do	☐	☐
30.	☐	☐	Some kids are very happy being the way they are	BUT	Other kids wish they were different	☐	☐
31.	☐	☐	Some kids have trouble figuring out the answers in school	BUT	Other kids almost always can figure out the answers	☐	☐
32.	☐	☐	Some kids know how to become popular	BUT	Other kids do not know how to become popular	☐	☐
33.	☐	☐	Some kids don't do well at new outdoor games	BUT	Other kids are good at new games right away	☐	☐
34.	☐	☐	Some kids think that they are good looking	BUT	Other kids think that they are not very good looking	☐	☐
35.	☐	☐	Some kids behave themselves very well	BUT	Other kids often find it hard to behave themselves	☐	☐
36.	☐	☐	Some kids are not very happy with the way they do a lot of things	BUT	Other kids think the way they do things is fine	☐	☐

APPENDIX D

CRCT Range of Scores

Appendix D

CRCT Range of Scores

2013-14 Test Score Ranges and Cut Scores

Criterion-Referenced Competency Tests

Content Area	GRADE	Does Not Meet Expectations	Meets Expectations	Exceeds Expectations
Reading	1*	650 to 799	800 to 849	850 to 920
	2*	650 to 799	800 to 849	850 to 920
	3	650 to 799	800 to 849	850 to 920
	4	650 to 799	800 to 849	850 to 920
	5	650 to 799	800 to 849	850 to 920
	6	650 to 799	800 to 849	850 to 920
	7	650 to 799	800 to 849	850 to 920
	8	650 to 799	800 to 849	850 to 920
English Language Arts	1*	650 to 799	800 to 849	850 to 910
	2*	650 to 799	800 to 849	850 to 910
	3	650 to 799	800 to 849	850 to 930
	4	650 to 799	800 to 849	850 to 930
	5	650 to 799	800 to 849	850 to 930
	6	650 to 799	800 to 849	850 to 930
	7	650 to 799	800 to 849	850 to 930
	8	650 to 799	800 to 849	850 to 950
Mathematics	1*	650 to 799	800 to 849	850 to 930
	2*	650 to 799	800 to 849	850 to 930
	3	650 to 799	800 to 849	850 to 990
	4	650 to 799	800 to 849	850 to 990
	5	650 to 799	800 to 849	850 to 990
	6	650 to 799	800 to 849	850 to 950
	7	650 to 799	800 to 849	850 to 950
	8	650 to 799	800 to 849	850 to 990
Science	3	650 to 799	800 to 849	850 to 990
	4	650 to 799	800 to 849	850 to 990
	5	650 to 799	800 to 849	850 to 990
	6	650 to 799	800 to 849	850 to 960
	7	650 to 799	800 to 849	850 to 960
	8	650 to 799	800 to 849	850 to 960
Social Studies	3	650 to 799	800 to 849	850 to 950
	4	650 to 799	800 to 849	850 to 950
	5	650 to 799	800 to 849	850 to 950
	6	650 to 799	800 to 849	850 to 980
	7	650 to 799	800 to 849	850 to 980
	8	650 to 799	800 to 849	850 to 990

* Due to budgetary constraints, the CRCT in grades 1 and 2 will not be administered in the 2013-14 school year.

Georgia Department of Education
John D. Barge, State School Superintendent
January 2014 • Page 1 of 3

APPENDIX E

Informed Consent

Appendix E

Informed Consent

VALDOSTA STATE UNIVERSITY

Parent/Guardian Permission for Child's/Ward's Participation in Research

You are being asked to allow your child (or ward) to participate in a research project entitled "Cluster versus Pull-out Talented and Gifted Classrooms: Elementary Talented and Gifted Students' Perceptions and Achievement. This research project is being conducted by Mimi Wetherington, a graduate student in the College of Education, Curriculum and Instruction at Valdosta State University. The researcher has explained to you in detail the purpose of the project, the procedures to be used, and the potential benefits and possible risks to your child (or ward). You may ask the researcher any questions you have to help you understand this study and your child's (or ward's) possible participation in it. A basic explanation of the research is given below. From this point on in this form, the term "child" is used for either a child or a ward. Please read the remainder of this form carefully and ask the researcher any questions you may have. The University asks that you give your signed permission if you will allow your child to participate in this research project.

Purpose of the Research: This study involves research. The purpose of the study is to study the possible effects of two different program options for Talented and Gifted students. Self-Perception refers to how one evaluates him or herself. My study is to explore if a student's placement in a particular program option has a bearing on their self-perceptions. My belief is that schools will be able to use the information from my study to identify practices which most benefit a student's self-perception.

Procedures: If your child participates, he or she will be asked to complete a self-perception profile. This will occur during school April 2014 and again in May 2014. The profile will take approximately 30 minutes to complete. This profile will assess how your child rates her or himself in the following areas: scholastic, social, athletic, physical, behavior, and self-worth.

Several children from each grade level and school will be randomly selected to answer a few more in-depth questions about their perceptions. These will be conducted on-line. A focus group session with six students from each grade will be conducted at the school during a school day during March and April. The interviews and focus groups are used to gain a better understanding of a child's perceptions. Pseudonyms will be assigned to each student to secure confidentiality. "There are no alternatives to the experimental procedures in this study. The only alternative is to choose for your child not to participate at all."

Possible Risks or Discomfort: "Although there are no known risks to your child associated with these research procedures, it is not always possible to identify all potential risks of participating in a research study. However, the University has taken reasonable safeguards to minimize potential but unknown risks." This is a study for only research purposes. Your child's participation is completely voluntary and will in no way affect his or her schooling. By granting permission for your child to participate in this research project, you are not waiving any rights that you or your child may have against Valdosta State University for injury resulting from negligence of the University or its researchers.

Potential Benefits: "Although your child [may/will] not benefit directly from this research, his/her participation will help the researcher gain additional understanding of how Talented and Gifted students perceive their educational settings. Your child will benefit from this study by the experience gained as a participant in a research study and helping schools learn how best to education Talented and Gifted students with regards to their self-perceptions.

Costs and Compensation: There are no costs to you or your child and upon completion of the study, students participating will receive a small incentive for participation in this research project.

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Assurance of Confidentiality: Valdosta State University and the researcher will keep your child's information confidential to the extent allowed by law. Members of the Institutional Review Board (IRB), a university committee charged with reviewing research to ensure the rights and welfare of research participants, may be given access to your child's confidential information.

All the information collected from your child will be kept completely confidential. The profile will be coded and your child's name will not appear on the forms. The only place your child's name will appear will be on the consent form and on a class list with each child's code next to his or her name. The profile, consent forms, and coded lists will be locked in a secure location with access to myself and my dissertation chairman, Dr. James A. Reffel. The gifted resource teacher at the school will have access to the coded list in order for her to track those students who have or have not been granted consent to participate in the study. The teacher will ensure that the coded profile is given to the student with the matching code. Other school officials will not have access to the information your child gives. Final results will be reported in a group form.

Voluntary Participation: Your decision to allow your child to participate in this research project is entirely voluntary. If you agree now to allow your child to participate and you change your mind later, you are free to withdraw your child from the study at that time. By not allowing your child to participate in this study or by withdrawing him/her from the study before the research is complete, you are not giving up any rights that you or your child have or any services to which you or your child are otherwise entitled to from Valdosta State University. Likewise, if your child decides on his/her own not to participate or to drop out of the study later on, he/she is not giving up any

rights, including rights to services from Valdosta State University to which he/she is otherwise entitled.

In regards to the interview questions your child may skip any questions that he/she does not want to answer.
Should you decide to withdraw the child from the study after data collection is complete, the child's information will be deleted from the database and will not be included in research results.

Information Contacts:

Questions regarding the purpose or procedures of the research should be directed to Mimi Wetherington at 229-559-1861 or mdwetherington@valdosta.edu. This study has been approved by the Valdosta State University Institutional Review Board (IRB) for the Protection of Human Research Participants. The IRB, a university committee established by Federal law, is responsible for protecting the rights and welfare of research participants. If you have concerns or questions about your child's rights as a research participant, you may contact the IRB Administrator at 229-333-7837 or irb@valdosta.edu.

Agreement to Participate: The research project and my child's (or ward's) role in it have been explained to me, and my questions have been answered to my satisfaction. I grant permission for my child to participate in this study. By signing this form, I am indicating that I am either the custodial parent or legal guardian of the child. I have received a copy of this permission form.

I would like to receive a copy of the results of this study: _____ Yes _____ No

Mailing Address:
_____

e-mail Address: _____

_____
Printed Name of Child/Ward

_____
Printed Name of Parent/Guardian

_____
Signature of Parent/Guardian Date

_____
Signature of Person Obtaining Consent Date

This research project has been approved by the

Valdosta State University Institutional Review Board

Informational Letter with Informed Consent

Cluster versus Pull-out Talented and Gifted Classrooms:
Elementary Talented and Gifted Students' Perceptions and Achievement

Dear Parent/Guardian:

My name is Mimi Wetherington and I am a graduate student in the School of Education, Curriculum and Education working on my doctorate at Valdosta State University. I am asking for your help. I am studying the possible effects of two different program options for Talented and Gifted students. I am asking for your written consent to allow your child to participate in this study.

Self-Perception refers to how one evaluates him or herself. My study is to explore if a student's placement in a particular program option has a bearing on their self-perceptions. My belief is that schools will be able to use the information from my study to identify practices which most benefit a student's self-perception. Your school district, as well as VSU's Institutional Review Board (IRB), have approved this study. The IRB evaluates research proposals to ensure that studies protect the welfare of research participants.

If your child participates, he or she will be asked to complete a self-perception profile. This will occur during school between February and March 2014 and again between April and May 2014. The profile will take approximately 30 minutes to complete. This profile will assess how your child rates her or himself in the following areas: scholastic, social, athletic, physical, behavior, and self-worth. Upon completion of the study, students participating will receive a small incentive.

Several children from each grade level and school will be randomly selected to answer a few more in-depth questions about their perceptions. These will be conducted on-line. A focus group session with six students from each grade will be conducted at the school during a school day during March and April. The interviews and focus groups are used to gain a better understanding of a child's perceptions. Pseudonyms will be assigned to each student to secure confidentiality.

All the information collected from your child will be kept completely confidential. The profile will be coded and your child's name will not appear on the forms. The only place your child's name will appear will be on the consent form and on a class list with each child's code next to his or her name. The profile, consent forms, and coded lists will be locked in a secure location with access to myself and my dissertation chairman, Dr. James A. Reffel. The gifted resource teacher at the school will have access to the coded list in order for her to track those students who have or have not been granted consent to participate in the study. The teacher will ensure that the coded profile is given to the student with the matching code. Other school officials will not have access to the information your child gives. Final results will be reported in a group form.

Your child's individual profile can be made available to you if you so desire upon completions of my data analysis. I anticipate the profile to be available in July 2014. Your child's results will be reported for each area of the above scales of the self-perception profile.

This is a study for only research purposes. Your child's participation is completely voluntary and will in no way affect his or her schooling. There is no risk in participating in this study than what you would normally encounter during a school day. At any time you may withdraw your consent for your child to participate. Your child will benefit from this study by the experience gained as a participant in a research study and helping schools learn how best to education Talented and Gifted students with regards to their self-perceptions.

To provide consent for your child to participate in this research study, please sign and return this form before _____. Please include a mailing address and email address for a signed copy to be sent to you. For further information or questions you may contact me at 229-251-3035, or by email at mdwetherington@valdosta.edu. Thank you for your time and consideration.

Sincerely,

_____ _____

Mimi Wetherington, Ed.S.
College of Education Graduate Student
Valdosta State University

James A. Reffel, Ph.D.
Professor, Department of Psychology & Counseling, Valdosta State University

Consent Form

I have read this consent form and understand the procedure to be used in this study. I also understand the benefits and risks associated with participating. Any questions I may have had were answered. By signing this form, I give consent for my child to participate in this study.

Parent/Legal Guardian Name

_____

Date _____

☐ Check here if you would like to be provided with results of the study.

☐ Check here if you would like to be provided with your child's results.

_____

Student's Name

_____

Parent/Guardian's Name

_____

Mailing address Street City Zipcode

_____

Email address

_____ _____

School name grade

I have presented this consent form to the child's parent/legal guardian and have answered all questions the parent/legal guardian may have had. I have provided a copy of this signed form to the individual who signed above.

Researcher Name_____

Researcher Signature_____

Date _____

Email: mdwetherington@valdosta.edu Phone: (229) 251-3035

APPENDIX F

Harter Self-Perception Profile for Children

Subscale Means for Each Sample by Grade and Gender

Appendix F

Harter Self-Perception Profile for Children

Subscale Means for Each Sample by Grade and Gender

	3rd Grade		4th Grade		5th Grade	
	Girls	Boys	Girls	Boys	Girls	Boys
Scholastic						
A	--	--	--	--	--	--
B	--	--	--	--	--	--
C	2.80	2.87	2.74	2.76	2.83	2.78
D	2.77	2.63	2.95	2.61	2.75	2.91
E	2.62	2.85	2.55	2.77	2.58	3.00
F	3.19	3.14	3.28	3.19	2.95	3.08
G	--	--	--	--	--	--
H	--	--	--	--	--	--
Social						
A	--	--	--	--	--	--
B	--	--	--	--	--	--
C	2.80	2.87	2.84	2.97	2.80	2.88
D	2.71	2.65	2.56	2.86	2.86	3.00
E	2.89	2.92	2.87	2.94	2.75	2.87
F	3.10	2.90	3.14	3.13	3.13	3.30
G	--	--	--	--	--	--
H	--	--	--	--	--	--
Athletic						
A	--	--	--	--	--	--
B	--	--	--	--	--	--
C	2.84	3.21	2.84	3.13	2.62	3.15
D	2.47	2.86	2.63	2.87	2.52	3.05
E	2.71	3.07	2.82	3.09	2.60	2.97
F	2.79	2.79	3.14	3.19	2.73	3.33
G	--	--	--	--	--	--
H	--	--	--	--	--	--

Note: Adapted from Subscale Means for Each Sample by Grade and Gender. Samples A,B, C, D are from the 1980"s. Samples E,F, G, H are from the 1990's. *Harter Self-Perception Profile for Children* (Harter, 2012).

	3rd Grade		4th Grade		5th Grade	
	Girls	Boys	Girls	Boys	Girls	Boys
Appearance						
A	--	--	--	--	--	--
B	--	--	--	--	--	--
C	2.99	3.16	2.86	3.13	2.62	3.15
D	2.78	2.72	2.95	2.75	2.70	2.99
E	2.83	2.99	3.03	3.03	2.69	2.98
F	3.20	3.16	3.20	3.32	2.79	3.27
G	--	--	--	--	--	--
H	--	--	--	--	--	--
Conduct						
A	--	--	--	--	--	--
B	--	--	--	--	--	--
C	3.16	3.14	3.11	2.75	3.32	2.84
D	2.80	2.86	3.06	2.76	3.02	2.82
E	2.88	2.83	2.75	3.07	2.92	2.82
F	3.13	3.11	3.25	3.07	3.47	2.89
G	--	--	--	--	--	--
H	--	--	--	--	--	--
Self-Worth						
A	--	--	--	--	--	--
B	--	--	--	--	--	--
C	3.01	3.14	3.13	2.89	3.04	3.14
D	2.76	2.82	3.13	2.80	2.66	3.24
E	3.10	3.12	3.26	3.21	2.86	3.11
F	3.33	3.28	3.24	3.26	3.25	3.28
G	--	--	--	--	--	--
H	--	--	--	--	--	--

Note: Adapted from Subscale Means for Each Sample by Grade and Gender. Samples A, B, C, D are from the 1980"s. Samples E, F, G, H are from the 1990's. *Harter Self-Perception Profile for Children* (Harter, 2012).

APPENDIX G

Verbal Assent

Appendix G

Verbal Assent

Hi. My name is Mimi Wetherington. I'm a student at Valdosta State University. Right now, I'm trying to learn about how gifted students like to learn. I would like to ask you to help me by being in a study, but before I do, I want to explain what will happen if you decide to help me.

I will ask you to answer some questions about how you feel about yourself and school. You will do this at the beginning of the study and at the end. There are only 36 questions and shouldn't take more than 30 minutes, Later I will randomly select 6 people from each grade to meet with me for about an hour. I will ask you to tell me about some of your experiences as a gifted student as a group. I will tape our discussion to help me remember the experiences. We will meet as a group. I will also randomly select two students from each grade to fill out an interview which I will send to you on-line. The questions will ask you to tell in your own words some of your experiences. There are no right or wrong answers, only your answers. At the end of school, I will be using your CRCT scores to see if there are any differences in your scores and other students' scores in different types of classes. Your name will be removed from the scores before I see them so I will not know your personal test scores. By being in the study, you will help me understand how gifted students feel about learning in different types of classes. Those who volunteer for the study will receive a small incentive for participating.

Your parents, teachers, and classmates will not know what you have said or written. When I tell other people about my study, I will not use your name, and no one will be able to tell who I'm talking about.

Your parents say it's okay for you to be in my study. But if you don't want to be in the study, you don't have to be. What you decide won't make any difference with your grades or classes. I won't be upset, and no one else will be upset, if you don't want to be in the study. If you want to be in the study now but change your mind later, that's okay. You can stop at any time. If there is anything you don't understand you should tell me so I can explain it to you.

You can ask me questions about the study. If you have a question later that you don't think of now, you can call me or ask your parents or teacher to call me or send me an email.

Do you have any questions for me now?

Would you like to be in my study and talk to me/answer some questions?

NOTES TO RESEARCHER: The child should answer "Yes" or "No." Only a definite "Yes" may be taken as assent to participate.

Name of Child: _____ **Parental Permission on File:** ☐ Yes ☐ No

(If "No," do not proceed with assent or research procedures.)

Child's Voluntary Response to Participation: ☐ Yes ☐ No

Signature of Researcher: _____ **Date:** -

_____

(Optional) Signature of Child: _____

APPENDIX H

Transcriptions of Focus Groups

Appendix H

Transcriptions of Focus Groups

Interview A-3rd LOCO

Teacher: What are some of your interests and hobbies?

Boy 1: sports and banc

Boy 2: games, science, computer

Girl 1: reading and sometimes writing, arts and crafts

Boy 2: I like arts and crafts too

Boy 3: I like to build things and collect rocks

Teacher talking to Boy 4: What do you like to do in your free time?

Boy 4: computer games and arts and crafts, projects to build

Teacher: Would you rather create or invent?

Boy 1: I like to create music.

Teacher: What do you mean? Write the words or the music or both?

Boy 1: I like to write words to songs.

Boy 2: I created a boat and it was small. I like to cook and create new dishes. I also write stories. I'm going to a story writing camp this summer. I created a model out of pinecones and straws.

Girl 1: I like to invent things.

Teacher: So tell me, what do you think are the good things about being together?

Boy 1: We're all just friends and we can work together.

Boy 2: Get things accomplished faster.

Girl 1: Because there are less people.

Boy 3: It's not loud.

Boy 1: What is it with you and not loud? (addressing boy 3)

Teacher: He likes it quiet. What are some of the disadvantages to being the only gifted one in the classroom?

Boy 1: I've never experienced that.

Teacher: You've never been the only one?

Boy 1: I have never been the only one!

Boy 3: I think I might have.

Boy 2: I never have.

Teacher: You've always had somebody else with you too? (addressing boy 2)

Boy 2: Yes.

Girl 1: I would say that you could help other people, but if you had more people in the class it would go faster by saying one person could help more people while you're helping another person.

Teacher: If you have been in a cluster classroom before, what were the advantages?

Girl 1: I've never been with other gifted students.

Boy 1: you can get more things finished.

Boy 2: You can interact with each other.

Boy 4: It's easier for the teacher.

Boy 3: You can do different things in groups.

Teacher: What are some of the disadvantages to being in a cluster class?

Boy 1: You might be with someone you are mad at.

Teacher: What are the advantages to being the only one gifted in your class?

Boy 2: You can finish work when you finish your assigned work.

Boy 1: You get to help everyone.

Teacher: Tell me again, do you like to work alone, in small groups, or larger groups?

Boy 3: I like to work with two small groups.

Boy 1: When we're split up in halves of the classroom, that's pretty fun for me.

Girl 1: Yes, because you can share your ideas.

Boy 1: No, not for me.

Teacher: I hate hearing that idea. What about the projects that you like to do?

Girl 1: I like models.

Boy 2: I like to build models and then write about them.

Boy 3: I like to just build things, mainly that I can get inside of or use. Like, a boat I can get inside of or a knife I can use.

Girl 1: One time me and my step-sister were just ordering a new fireplace, so there was a lot of cardboard. Me and my sister got an idea that we could use the cardboard and build like, a little fort. We got some chairs and we made some forts.

Teacher: That sounds like a good idea, kind of like that commercial where you see the children making it.

Boy 4: I like making animal models

Boy 1: I liked the project we did with building the animal models with their adaptations and we did our research.

Teacher: is there anything else you'd like to tell me about being gifted?

Boy 1: Discovery is fun and entertaining.

Boy 2: You can do your homework.

Girl 1: It is quiet and you can play games.

Boy 4: You can finish your other work.

Interview B-4th-LOCO

Teacher: This is fourth grade focus group. Talking about explaining what things are because some of you may or may not know. Tori knows and Savannah knows for sure about what a cluster class is because that's what is was last year, where all of the gifted are in one room. A regular class is just like a pull-out, where one or two gifted are in one room and so I'll be asking you some questions about those. The first thing that I want to ask you though is what are your interests and your hobbies, and do you get to do them at school?

Girl 1: I like doing photography.

Teacher: Photography?

Girl 1: Yes.

Teacher: Do you get to do that at school?

Girl 1: No.

Boy 1: I like to play basketball.

Teacher: Can you do that at school?

Boy 1: Yes ma'am, in the gym.

Teacher: So, at recess and exploratory?

Boy 1: Yes.

Boy 2: I like playing baseball.

Teacher: (laughing) Yeah, I kind of thought that you would say that. Do you get to play baseball at school?

Boy 2: No.

Girl 2: I like to read and write stories.

Teacher: Okay. Is that something that you do at school though?

Girl 2: Yes ma'am.

Boy 3: I like to play games.

Teacher: I guess that one is out for school, right?

Boy 3: Yes ma'am.

Boy 1: I like video games.

Teacher: Do you get a chance to play them at school?

All: Nope.

Teacher: What other kinds of things? Is there anything that you like? Like, somebody in third grade said that he liked to collect rocks. Third grade had the rock unit so he can do that.

Boy 2: I like collecting marbles.

Teacher: Okay, are you able to do that at school?

Boy 2: No.

Teacher: We use to play with marbles a long time ago in second grade. As we keep talking, if you think of something, just say it.

Girl 2: I got something.

Teacher: What?

Girl 2: Arts and crafts.

Teacher: You like doing that? Can you do them at school?

Girl 2: Not much.

Teacher: Maybe not as much as you would like to?

Girl 2: No, not much.

Boy 3: I like working with technology and stuff.

Teacher: So, anything computer related is what you like doing? Are you able to do that at school?

Boy 3: Yes.

Boy 2: I like doing anything science related with animals.

Teacher: Live animals?

Boy 2: Yes ma'am.

Teacher: Are you able to do that?

Boy 2: Not a whole bunch, we have the worm farm.

Teacher: Okay, this next question is about how you like to work. Do you like to work alone? Do you like to work in small groups like, between two, three, and four? Or do you like to work in larger groups?

Boy 1: Alone.

Boy 2: I like working alone.

Teacher: Why do you like working alone?

Boy 2: I just feel like I could get it done faster.

Boy 1: I don't have to worry about other people slowing me down with "hey, what is this?", and I have to describe the whole thing to them.

Boy 2: While they're working out all the questions on paper, I can do it all in my head and by the time they're done, I've done like four questions.

Boy 3: Yeah, I like working alone because you can think of the ideas in your head without having to share them with everybody at your table.

Girl 1: I'll just be the odd ball. I like working in groups of three.

Teacher: So, a small group? Why do you like working in a small group?

Girl 1: Because everybody puts in what they think and kind of discuss about it.

Teacher: Okay, why not a larger group?

Girl 1: I think that's too many people. It takes forever for everybody to get finished, and it can get really loud, like if they're talking.

Boy 2: Mainly because it distracts more people from doing their work and you can't think as much.

Teacher: What types of projects do you like to work on?

Boy 2: Science projects.

Boy 1: I like math, but there's not many projects to do in there.

Girl 1: I like science and social studies projects.

Teacher: (addressing boy 1) So, you wish there were more math projects?

Boy 1: Yeah.

Teacher: There are lots of math projects; it's just a matter of finding them and getting them going, too.

Girl 2: I like some social studies projects.

Teacher: Give me some examples of some of the projects that you may have done any time in your career that you really liked doing.

Boy 1: In third grade, we were doing Greek and we did 3D and I did the Parthenon.

Girl 1:

Teacher: Okay. That was a good one, wasn't it?

Boy 2: Does it have to be at school or no?

Teacher: No.

Boy 2: Making one of those volcanos.

Teacher: Okay, so making models of things like a volcano.

Boy 3: I like whenever we did the Native American houses.

Teacher: Yeah.

Boy 2: I like doing after school projects, like doing handmade stuff.

Teacher: Making models with things like play-doh, is that what you mean?

Boy 2: Yeah, just making models.

Girl 2: Is it any type of project that we did?

Teacher: Yes, any project that you've enjoyed doing.

Girl 2: I liked doing the Native American homes, like the teepees and igloos, and how we used sugar cubes to build them.

Teacher: Yeah, that was cute. Do you like to create or invent things?

All: Yes!

Teacher: What types of things do you like to create or invent?

Boy 1: Electronics.

Girl 1: I like to make stuff for my toys at my house.

Teacher: Okay, what do you mean when you say "make things"?

Girl 1: Like clothes, and house stuff and food.

Boy 2: I make new tricks for skateboards and stuff like that.

Teacher: Oh okay, so you just kind of design and choreograph the whole trick?

Boy 2: Yes ma'am.

Girl 2: I like making treehouses and stuff.

Teacher: Are you talking about like the things inside a treehouse?

Girl 2: I like making it out of nature. Like making your own little fort, I like doing that kind of stuff.

Teacher: Okay. Do you like creating or inventing stories or plays?

All: Creating plays!

Teacher: Writing it or actually acting it?

All: Acting it.

Girl 2: I love acting!

Boy 1: Acting is fun!

Teacher: What about music or stuff like that?

Boy 3: I like listening to music.

Teacher: What about writing songs?

Girl 2: I like writing songs in my free time.

Girl 1: I like making poems and fantasy stories

Boy 2: I can't really do anything when it comes to music (laughing).

Teacher: Do you enjoy listening to music?

Boy 2: Yeah, some music.

Teacher: Okay, even if you haven't been in a cluster classroom, just think about what it would be like if all of you were together. Tell me what do you think would be some of the advantages to be in a regular classroom with maybe fifteen people, with all of you together in there.

Boy 3: Well, some people in the class don't think as fast and that always slows me down when we're in groups so I think that people in higher advanced levels would help.

Teacher: You would like it because you would be grouped together with the people who are at the same level and kind of know the same thing? It would help?

Boy 2: I think because I work super-fast, I don't ever really check my work so whenever I get something wrong and they point out how I got that wrong, it kind of helps a little.

Teacher: Okay, so it's kind of like a check and balances thing?

Girl 2: I like working together because you get along well with the people so that just helps you focus more and coming up with ideas together because you trust those people.

Girl 1: I don't like it when you have a group and then you have one picky person that always argues and never agrees to anything. If you have more people in the class, then you can choose out of those people.

Boy 1: If it's like a four person group, three people agree on something, but that one person will not change their mind and they did the entire problem and they know they're wrong but they still won't stop saying they're right.

Teacher: What would be some disadvantages if there was a larger group of you together?

Girl 2: It would be louder inside the classroom.

Boy 2: Yeah, there are a lot of friends in this group so we would be talking a lot.

Teacher: Is that bad?

Boy 1: Yes, whenever people talk way too much, I can't concentrate whatsoever.

Boy 3: If there's a large group and everybody is throwing out their ideas all at once, then you can't get it in your head.

Girl 1: You have to have all the people in one classroom so it might get a little crowded and everybody has to talk one at a time otherwise, you won't be able to understand.

Boy 1: They're all screaming out the same ideas and you have no idea what they're saying because they're all saying it at the same time.

Teacher: Okay. Your classroom would be just like a regular fourth grade class now except, instead of having you by yourself with everybody else is not gifted, it would be like all of you guys with thirteen other people.

Boy 1: while we're getting done quickly, they're still trying to figure out the question. We're trying to explain it to them.

Teacher: You wouldn't, you guys would be working in your own group.

Boy 1: I always do everything in my head faster than I can actually explain. I don't know how to explain what I'm doing.

Girl 1: We could get a lot more done, I think.

Teacher: With a group?

Girl 1: If we did all of the gifted students because we would just get it faster.

Teacher: Right, so you would just go on and move on to the next thing.

Boy 1: Since it's gifted students, we could get done a lot quicker.

Girl 2: If they're not in the gifted program, they could be a slower thinker and we would already be on the next question without them.

Teacher: Just like last year, you guys did a whole different novel than what the other people did. You guys were off on your own, doing your own thing in Social Studies and the other ones were doing something different. It would be kind of like that.

Boy 3: I like the idea, but if you had all the gifted students spread out, they could help the other people in that class.

Teacher: That was my next thing, what are good things about being the only gifted student in your class?

Boy 2: You can have two or three, but you need at least one to help the other students in the classroom.

Teacher: What are the disadvantages of being the only gifted student in a class?

Boy 1: Whenever it comes to group questions, instead of other people also trying to think of something, it would be like "hey what did you get for this?" you say one answer then they're automatically going to go with that answer, no matter what.

Girl 2: That's what happens in my class.

Teacher: So it's not good to be the only one?

Boy 1: No.

Boy 3: In my class, there are these two boys and they don't want to think out the problem so they just wait until I solve the problem and they come up to me and say "what's this answer?"

Teacher: So they make the gifted one work and do all the work or solve the problems and they're not going to do anything.

Boy 1: When we do study island groups and we play boys versus girls and I'm the only boy gifted student so when I'm sitting there trying to figure out the problem, they're like "hey, what do you think the answer is?" They're asking me the whole time and I'm trying to figure it out.

Teacher: You're kind of put on the spot all the time?

Boy 1: Yes.

Teacher: Is there anything good to being the only gifted one?

Girl 1: I don't think so.

Teacher: What would be an advantage?

Girl 1: There would be a lot of disadvantages because you would just be the only one if you got stuck with someone else. You kind of have to figure everything out by yourself and explain it and it would take twice the time.

Boy 1: If there is a kid that's not in gifted but is still smart, it would be okay; if they were pretty smart, but they weren't gifted smart.

Teacher: Think about you guys, did all of you make gifted at the same time?

All: No.

Teacher: Okay, so you were tested last year but you were put in a group of gifted children all of last year so that you had the advantage of being with them because you were just as smart, there was just one test. What would be some of the advantages of being grouped together in a classroom?

Girl 1: You could figure things out and everyone could put their input of what they think it was.

Teacher: You like working together to figure it out?

Boy 2: The group of gifted could help the other people in the class.

Teacher: Okay, so not only you guys helping each other, you would be helping other children in the class.

All: Yeah.

Boy 3: One person couldn't go around helping everybody because everybody would come to them. If there was a lot, and nobody is coming to you, you can go around and help everybody if you see they're struggling.

Boy 1: I think about the non-gifted people, if you don't know it, somebody can probably explain it to you so you can figure it out next time.

Girl 2: If one person has learned something a different way and you learn it the way you were taught it might confuse them. If you get it wrong, they can come over and tell it the way they learned it and that might be easier for you than the other way.

Boy 1: There was this group of three people that just couldn't figure it out, if you had three different gifted people, you wouldn't have one person trying to explain it to three people. Each one of them might need a different strategy. It would be a lot harder to teach all three of them at the same time.

Teacher: What other advantages or disadvantages would there be working together or being alone? Is anybody the only gifted one in their classroom this year? Tell me what are the good things and bad things?

Boy 2: The good thing is, there are people scattered that are smarter and not smarter. Some of the not smarter kids that get in my group don't do anything. They would just sit there and read their book while I'm doing all the work and right when I finish they ask "what are all the answers?" I try not to tell them so I explain it so they can figure it out.

Boy 1: I'm not exactly alone; we have two different tables and there are two girls at the other table and I'm the only one at my table. Everyone is just talking and talking and I'm just doing my work.

Teacher: Do you ever work with the girls?

Boy 1: Not much.

Teacher: You do really feel like you're by yourself.

Boy 1: Yes, pretty much.

Teacher: What are some advantages to being with somebody else?

Boy 3: I guess if you did have somebody it would be easier because you wouldn't be put on the spot.

Boy 2: We use to have another gifted kid but he moved.

Girl 2: Being in a room with other discovery people is an advantage because some are smarter than others so if you don't get it, you can maybe ask them to explain it.

Boy 2: You have an advantage because you have people to back you up.

Teacher: Right, because everybody is not gifted in the same thing. From music to sports to academics, there are all kinds of different ones.

Boy 2: Whenever we get in discovery and we're doing certain projects, some of us are like "what do we do?" Since we always get put in three groups, we only have like four or five people. I'll be in a group of five people and the other four are going at it and I can't really do anything so I'm just sitting there waiting for everyone to get done.

Girl 1: They think when we have three different groups and the gifted students are all in the groups, they don't really care because they know that we will help them. They don't want to pay attention.

Teacher: They're relying on you to pay attention, find the directions, do everything and tell them what to do?

Boy 3: It's like when we're done they say "it's time to go get the answers from that person".

Boy 1: We'll sit there and we'll be doing the answers and they'll act like they're doing it and five minutes later they're saying "what were the answers?"

Girl 2: I have a disadvantage. Even though I'm not by myself, the other kid is all the way at the other end of the table and when we do tests without the offices, I feel like everyone around me is looking down on me because the know I'm in gifted.

Boy 2: Whenever we were doing the CRCT, we didn't get offices. Even though we were spread out, if you actually tried, you could look over and look at somebody's answer sheet.

Teacher: The good thing is that there are different forms. I had a different form for every one of my children. Is there any experience about being gifted that you would like to tell me so I can include it in my study? Any feelings you have about being gifted or what you do or how you learn or study?

Boy 2: I kind of like being in gifted because you can mind your own bubble; we don't have to worry about other people. We could finish our test and turn it in but when we're in our normal class, all the gifted students are bubbling in the answers and the other people that sit at my table are all friends so they talk the whole time. Once I'm done I just sit there because usually I get done faster than she says we can put our answers in the clickers.

Teacher: Are you saying that's an advantage or disadvantage?

Boy 2: Disadvantage because while I'm waiting for her to get the clickers ready, people are just looking at my paper the whole time.

Girl 2: Gifted is like a faster process because people can get it done faster and you do not have to just sit there and wait.

Boy 3: I don't like when you're in a regular classroom because they always learn a lot slower. When I was in first grade, I was already picking it up and finished what they were still learning and it was kind of boring.

Teacher: So discovery is good for you when you're pulled out and you learn quicker?

Boy 3: Yeah.

Boy 1: When we're taking a week or two weeks on a really big part of Social Studies, in a normal class it takes them almost a month to cover the same thing. They're doing the same thing every day and they keep getting it wrong.

Girl 2: Another good thing is that we very rarely get homework, but if you're in a regular class you get homework almost every single day.

Girl 1: In gifted you get to do more things than all the other classes at the moment. We get to do projects.

Girl 2: I think discovery is the same stuff; we just go at a faster pace.

Boy 3: We mix it up from other classrooms.

Teacher: Right, we don't all have the same schedule and pace. Is it a problem that you guys weren't doing the same as them?

Girl 1: To me it is because sometimes I have questions on social studies stuff and they're not on it so they can't really answer it.

Girl 2: I don't think it really matters because you're going to learn the same things just not at the same time.

Teacher: Okay, we're going to stop here for today.

Interview C-5th LOCO

Teacher: Okay, this is the fifth grade focus group. So, the first question is What are your interests and hobbies, and are you able to pursue those at school?

Boy 1: What's pursue?

Teacher: Do them. Are you able to work with them, or do them, whatever your hobbies and interests are here at school?

Boy 1: Not really because we don't have school sports teams in elementary school.

Teacher: Okay.

Boy 1: You can't hunt or fish or do any of that at school.

Teacher: That's the truth.

Boy 2: That's exactly what I was going to say.

Girl 1: Well we don't really have a lot of free time at school, but I like to do gymnastics. Sometimes we can do that outside, but one time some people were doing it that really didn't know how and I guess the teachers thought they were going to hurt themselves, so they won't let us do it now.

Teacher: Mmhm. What about are there any other types of interests that you have or hobbies that maybe aren't sports related?

Boy 1: I wish we could just pick stuff to learn about instead of having certain standards.

Teacher: What would you pick?

Boy 1: Well I'd probably pick…I like space and animals.

Teacher: Okay. What do you guys think about that suggestion?

Girl 1: I like surgery and stuff like that.

Teacher: The more medical related things? You guys should get involved in Scope, at the college. You know where you can take those classes like that on Saturdays.

Boy 1: Yeah, well on Saturdays I'm not going to college. That's my free time.

Teacher: (laughing) Yeah, but the classes are on Saturday mornings and you can pick things like space, and computers, and languages, and all kinds of things like that, including rocketry and art. It's a lot of fun.

Boy 2: We can't do those during the week?

Teacher: No, they only offer them on Saturday mornings because the college professors that teach them have college classes during the week.

Boy 2: How early in the morning?

Teacher: It's like from 9-12 and it's only during the winter time, for like 6 weeks. It's called Scope and it's really a good program.

Boy 1: I'm not up at 9.

Boy 2: Well that's not bad.

Teacher: Okay, tell me about this. Do you like to work alone, in small groups, or with a large group?

All students: Small groups.

Teacher: All of you say small groups?

All students: Yeah.

Teacher: Okay, when you say small group, tell me what kind of size you are talking about.

Girl 2: 7 or 6.

Boy 1: 5.

Boy 2: 3 to 5.

Girl 1: 5 to 7.

Girl 1: Yeah 5 to 7.

Teacher: You said 3, so anywhere from 3 to 7?

Girl 1: I like our Discovery group because I wouldn't like to be like one big classroom.

Boy 2: That's 6.

Teacher: That's small for you, right?

Girl 1: Uh-huh.

Boy 1: 10 at the most.

Girl 2: No, that's too much.

Girl 2: If we're just in class, I like maybe 2 or 4 people.

Teacher: Okay, so really you like working in pairs, triads, quads? Why would you not want to work in a larger group?

Boy 2: Because when you're in small groups, you get to do stuff.

Teacher: What does that mean?

Boy 1: Like in the large group, it's less interactive and other people slow you down and you rush other people so it's better in small group.

Boy 2: They can group you by certain things and you can be working on the same thing.

Teacher: Okay, so you said less interactive, rushed.

Girl 1: Sometimes I'm too shy to say something, even if other people are saying something in my class, but if I'm in a small group I'll usually say something and get help.

Teacher: Okay. What types of projects do you like to work on?

Boy 2: Stuff where you build stuff.

Boy 1: What's it called diorama?

Teacher: Oh yeah, diorama. Now dioramas and building things are two different projects.

Boy 2: Making something.

Teacher: Oh, alright, making something. Now when you talk about building, are you talking about big things or making models, like dioramas?

Boy 1: Any, just not book reports.

Teacher: Okay, no book reports?

Boy 2: Or oral reports.

Boy 1: Anything with the word report in it.

Teacher: (laughing) It's not good? Alright, what other kinds of projects do you like working on?

Long pause

Teacher: I mean do they always have to be building things?

Boy 1: ???? is okay, but I'd rather do something more hands on.

Teacher: Okay, hands on. Can you give me some examples of some hands on projects that you've done Boy 1: The Civil War thing.

Boy 2: We built a Civil War project battlefield, and a habitat.

Teacher: Okay, habitats for an animal?

Boy 1: Yeah, and we built the robots in your class.

Teacher: The Lego robots? Okay.

Girl 1: And the pet rock thing.

Teacher: Okay, what are some other projects that you've enjoyed doing in your years?

Boy 1: In Mrs. Mageehan's class we took a shoebox and we turned it into a boat.

Teacher: Ahh, so you had to invent?

Boys: Yeah.

Girl 1: When I was younger I liked to play with dolls so we went to Michael's and Hobby Lobby and got lots of little stuff like fabric and paper stuff and I tried to build like a little doll house.

Teacher: Do you like to create or invent things?

Girl 1: Depends on what they are.

Boy 1: I mean I can invent them. I just don't know what to invent.

Teacher: Ahh, okay. But do you like to invent?

Boy 1: Yeah.

Boy 2: What do you mean by invent?

Teacher: Well, you just think to yourself, "I'd really like to invent something." So you try to figure out how to make it. What about so you like to write stories?

Boys: Nu-uh! No writing.

Teacher: Okay, no writing stories.

Girl 1: I don't really mind writing them but they always turn out kind of.

Boy 1: I like reading way better than writing. I will read a story, but I don't want to write it.

Teacher: What about writing music or playing music?

Boy 2: I don't do anything with music.

Boy 1: I like listening to it, but I can't write it.

Girl 2: I don't really like playing music, but I like listening to it.

Girl 1: I could make up a song.

Boy 1: I probably could, but I don't want to. I don't have the patience.

Girl 1: About the stories, I like to make them up. I just don't like to write it.

Teacher: Okay.

Boy 1: It's hard to write on a specific topic. I like to make up my own topic.

Teacher: But you could record them. Then someone else could take them and write them, right?

Girl 1: Uh-huh.

Teacher: So you do like making up stories?

Boy 2: Yeah, we should have like 5 writing fairs a year.

Boy 1: I just wish you could pick your own topic for the writing fair.

Teacher: Oh yeah, I agree. What about plays? Do you like writing plays?

Boy 2: I like to act.

Teacher: You like to be the actor? Okay.

Boy 1: I'm not really an actor. No speaking parts for me.

Girl 1: No singing parts.

Teacher: What about writing poems? Do you like to write poems?

Boy 2: Uh-uh I can't write poems.

Boy 1: I mean I like poems, I just don't want to write them.

Teacher: I was always that way to. What do you think? Now, of course, you 3 were definitely in the cluster classroom when you were in third grade. Remembering back to what it was like when there was a group of you, what do you think are some of the advantages of being in a cluster classroom?

Boy 2: (whispering) What's a cluster classroom?

Teacher: Okay, a cluster is when you have like the 6 of you guys in one classroom and you'd be there all day long. So you're group together all day long, but you're still mixing with other people, of course.

Girl 2: Oh, like gifted all day long?

Teacher: Yeah, it's gifted all day.

Boy 3: So you'd be like advanced in every subject.

Teacher: So tell me, what were the advantages?

Boy 3: You could like kind of be on the same page.

Boy 1: Yeah because you would have to complain every 10 minutes.

Boy 2: You wouldn't have to wait for the slower ones.

Teacher: Okay, so you mean your group would all be together? Okay. So what else would be an advantage?

Boy 1: It's the same teacher.

Boy 3: You could do more hands on stuff like experiments and projects.

Girl 1: When we do like one subject in Discovery, like now. Science isn't my best subject, so I'd like to learn like advanced in other subjects too.

Teacher: So you are able to tap into if Science isn't where you're gifted, but it's in reading and language arts, then you have the advantage there?

Girl 1: Uh-huh.

Teacher: Okay. Are there any other kinds of advantages that you can think of?

Girl 2: You get to be with your friends.

Boy 2: You get to do more.

Boy 1: Instead of being different from the rest of your class, you aren't looked at differently. And people wouldn't say, "Oh of course she's the smartest in the class. She or he can do it."

Teacher: Kind of set you up?

Girl 2: Sometimes I wouldn't be able to finish my work at my other school that I had to keep up with in my homeroom class, so I'd get in trouble if I didn't have the time to do it.

Teacher: Mmm, so you'd have the time to complete your work? Okay, on that same thread, what would be disadvantages to being in a cluster?

Boy 3: You wouldn't get to meet as many people because you'd be with them so often. Like if you were spread out, you get to meet different people in different classes instead of you always being in somebody's class.

Boy 2: Okay, this might be a little mean, but maybe if you have slower friends you wouldn't get to see them as often.

Teacher: Well remember there are going to be other people in there.

Boy 2: Oh.

Teacher: It's okay. A lot of people have a hard time understanding that. Yeah, it's just your group, so you're still with the other people in your homeroom. I can still write that down though, meeting different people. So it would be worrisome that maybe you wouldn't be able to be with other people.

Boy 1: In the regular way you get to see all of the advanced people in the whole grade?

Teacher: Right. Well, in the cluster model it's supposed to be all of them anyway.

Boy 1: In the same class?

Teacher: Yeah. Because remember when you were in mine, that was everybody who had tested that year. So I put down meeting people with other academics. What would be some other disadvantages?

Boy 1: I don't have anymore.

Girl 2: I don't either.

Teacher: Alright. Well, if you think of anymore, we can add them. What are some good things about being together?

Boy 2: So you can relate to the other people.

Boy 3: That way if you ask a question, everybody won't be like, "I don't know."

Girl 1: We can go to our smarter friends for help.

Teacher: Any other advantages of being together?

Boy 1: Well this is a disadvantage. Most of the people would come to you and ask for help, so you wouldn't be able to do your own work. Everybody comes to you if you're the only one in the class.

Girl 1: I don't really talk about Discovery that much around my friends because none of my closest friends that I hang around a lot are in Discovery. But the people that I don't really talk to

a lot, I don't know if they really know what Discovery is. Like I don't know if they think it's where we need more help or if it's advanced.

Teacher: So is that an advantage or a disadvantage? I mean, are you trying to hide it? Is that why you don't talk about it?

Girl 1: No I just don't want to brag about it.

Teacher: Uh-huh. So are you saying that it would be an advantage if all the gifted were together so you wouldn't have to worry about bragging?

Boy 1: Well they aren't pulling you out to make it obvious.

Teacher: Ahh, okay. So along those same lines, and Brynn probably has a little bit more experience with it in third grade, like you all have experienced in fourth and fifth grades, what is like when you're the only gifted child in the room?

Boy 2: It's tough.

Girl 1: It's a little annoying because people always asks you the questions and asks you for help instead of the teachers, and they don't want an explanation. They just want an answer.

Boy 1: They always want to be your partner.

Boy 2: Yes. Everybody fights over you because you're the smart one. You can do all the work. They are like, "I'll just stay back and watch you do it."

Teacher: Are there good things to being the only gifted one?

Girl 1: I'm sure there is, I just can't think of any right now.

Girl 2: Well it makes you feel like smarter.

Boy 1: It makes you feel good about yourself. I mean I already feel good about myself.

Teacher: It just adds a little extra to it?

Boy 1: Yeah.

Teacher: Would you feel good about yourself if you were in a cluster classroom?

Students: Uh-huh.

Teacher: What other things are good about being the only gifted student in the class?

Girl 1: You get to do other stuff that some kids don't, like other challenges and projects.

Girl 2: Sometimes when my other classmates are doing work on a subject and I happen to be in there with them, I don't have to do any work.

Boy 2: Yeah, in Science when they are doing something, we don't have to do it.

Boy 1: Yeah, and we don't have homework. They can be loaded up with Science homework and we don't have any.

Teacher: Yeah. What are some other experiences, because you guys are the top of the school, the big people on campus, what are some other experiences you've had being gifted?

Boy 2: You know some of the higher grades stuff so whenever they start to talk about it, you kind of know what they're talking about already.

Teacher: Oh, okay.

Boy 2: You're more prepared for middle school because you get background knowledge like you learn more than the regular standards and when you go to middle school you know what it is.

Boy 1: What was the question again?

Teacher: What were other experiences that you've had throughout your whole career being in gifted?

Boy 1: Working with other grades. In first grade, we were just mixed with the second graders.

Teacher: So that was a good experience?

Boy 1: Yes.

Teacher: (addressing girl 1) When you were at Cook County, weren't you the only one in your room?

Girl 1: I don't remember, I think I was the only one.

Teacher: Do you remember any things that were good things about being gifted?

Boy 1: You didn't struggle with things.

Teacher: Okay. What about projects or things that you did that stand out to you that were fun, interesting, or something that maybe other children in the regular class didn't get to do but because you guys were in discovery, you did get to do?

Boy 2: In first grade or kindergarten, you got to pick a subject and we get to learn on it for like a couple weeks.

Teacher: Oh, so you got to pick your own topic and study it?

Boy 2: Yes ma'am.

Teacher: Okay.

Boy 1: You learn things real fast because you're gifted, and all the people would get their stuff real fast then you can move on.

Teacher: Anything else you would like to tell me? I just really want to know what you guys think about being gifted, about how you learn.

Girl 2: Sometimes it takes me longer to do my work than everybody else. I mean, I know how to do it but sometimes it just takes me longer.

Teacher: Do you know why?

Girl 2: I'm not sure. Sometimes it takes me longer on some of the problems. I get it right but it just takes me longer sometimes.

Boy 2: We have like some tricks. Sometimes your teacher makes you do it. Like Common Core Math, we do it in a regular standardized rhythm, but now they brought in dots and lines and grids.

Teacher: It's just a new strategy, that's all.

Boy 2: I don't do visual, I do standard. You already know what you're doing.

Teacher: Common Core just wants to teach you different strategies, try it and if it's not good for you, you do your own thing.

Boy 1: Then it wants you to do a certain one.

Teacher: It's just a strategy and even though you or I might not use it all the time because it's quicker for us because we see it in our head.

Boy 1: I like to do stuff in my head and sometimes she makes us do it on paper. I hate to see the words "show your work" on my paper or "explain how you got this answer". I don't know why I got this answer, I just did.

Teacher: Alright, thank you so much for your help.

Interview D

Teacher: This is fourth grade Focus group at Worth County. First thing I want to know is what are some of your interests or hobbies? What are things that you like to do? The second part of that question is are you able to do the things you like to do at school?

Girl 1: I like to play soccer and we have soccer balls at the school.

Boy 1: I like to play football, baseball, any kind of sports I can get my hands on.

Teacher: Are you able to do that here at this school?

Boy 1: Well, anything that's in the bag that we have at recess. In the bag are footballs, soccer balls, basketballs, maybe a tennis ball.

Teacher: Is recess the only time you get to do it, or do you get to do it during your specials?

Boy 1: We do it during P.E. and recess.

Teacher: Okay. What are some other interests or hobbies?

Boy 2: Computers.

Teacher: Okay, can you do those at school?

Girl 1: In the computer lab.

Boy 1: I like to play Mine craft but we can't play that at school.

Teacher: So you like video games?

Boy 1: Yeah.

Boy 2: We can get on iPads at school and home.

Boy 2: Two of my hobbies are swimming in the lake and catching tadpoles and I don't think you can do that here.

Teacher: I don't think, not at this school.

Boy 2: Not unless there's a giant puddle outside and it rained frogs.

Teacher: What else?

Girl 1: One of my hobbies is cheerleading.

Boy 1: Shooting guns and archery.

Teacher: Can you do those things at school?

All: No.

Boy 2: At the high school, you can do archery and pump rifles.

Teacher: Oh cool.

Boy 1: I have my own pump rifle.

Girl 1: I want to join the archery team when I get to high school.

Girl 2: I like to draw.

Teacher: Ahh okay. You like anything artistic or just drawing?

Girl 2: Anything.

Teacher: Are you able to do that here?

Girl 2: Sometimes in art class and in my free time. I can draw pretty good but they're just like random doodles that I put down on paper.

Boy 1: I like crafting and taking some type of toy apart and putting it back together in a different way with different parts.

Boy 2: At my house I just grab something out of order, anything I can get, and make it into new things because it takes up my time.

Teacher: Okay.

Girl 2: I like to cook.

Teacher: Cook? You can cook here at school?

Girl 2: No.

Teacher: Think about how you like to work. Do you like to work alone? Do you like to work in small groups like two or three or do you like to work in a larger group with maybe five or six?

Boy 1: I like to work alone.

Boy 2: It depends on what we're working on. If it's something that's better to do with a group then do it with a group. If it isn't then do it by yourself.

Girl 2: I like working in a group with like three to five.

Teacher: Why?

Girl 2: That way if you don't understand something, you have someone there that might also understand it.

Girl 1: I like working alone because usually when I get in groups, everybody like starts fighting or something has to happen. That's why I don't like working in groups.

Boy 1: I like to work independent because I have a hard time not being bossy. When I'm in a group, I tell everyone what to do. I try not to but when people don't do what I say I get mad.

Girl 1: Yeah you do.

Teacher: (laughing) Well that's smart of you to realize that that's why.

Boy 2: When I'm in a group no offense, but I'm usually the right one and everybody always argues with me because they think I'm not right whenever they are wrong themselves. So then I say, "You're wrong and I'm right." Then they finally figure it out and they're like, "Oh yeah."

Teacher: What type of projects do you like to work on, and give me some examples?

Boy 2: Some that are challenging but not impossible.

Boy 1: Ones that we can let off some creativity because when we were in Mrs. Carrie's class we made a haunted mansion. Whenever we did that we got to make up our own ride.

Girl 1: Oh yeah, and we had to figure out the weight.

Boy 1: But we worked on it for a few weeks or a few months and it was really fun because we got all of our creative props out and we put everything where it was supposed to be and we had to do all of our measurements and if we messed up we had to start over. It was hard but it wasn't impossible. It was just fun.

Teacher: Sounds like that was a fun one.

Girl 1: Remember when we had to design our own candy bar?

Students: That was so fun!

Boy 1: We had to look at the calories and the sodium and everything that was in it and design it.

Teacher: Okay, so you said that you like projects where you can design and create. What are some other kinds of projects that you like to do?

Girl 2: I like writing, so I like projects where you get to write like maybe a few paragraphs or something.

Boy 1: I hate writing.

Teacher: Do you write songs, scripts, plays? What kind of writing do you like?

Boy 2: It's fifty-fifty for me.

Girl 2: Like normal writing. Like we had this project where we had to make like a little book and we had to write a few paragraphs and it was just normal about what place we picked.

Girl 1: I like projects where you get to like record your voice and actually say stuff that you think is meaningful about what is your project.

Teacher: Oh, okay. So making an audio of whatever you are doing?

Boy 3: I don't like projects where you have to record your voice. I like projects that are hard, yet simple, if you know what I mean. I like projects where you are given a certain topic, and you don't have to look on websites to find a topic.

Teacher: So not doing research on it?

Boy 3: Well I like being given a topic and then doing research on it. Like we are still working on a project about a certain place and we had to look on like Travelguide to find stuff. I did the Great Wall of China. To me that was easy.

Boy 1: I don't like projects where you have to write. I like projects where you can like get on the computer and use things like Moviemaker or anything you want. I mean it has to be on a certain criteria or a rubric, but you can do any kind of project you want and you can pick the place you want to go. You get to write like a whole page on stuff you've done. See, I did the Mayan Civilization. We had to write about it and draw something that took us a few weeks. We had to draw really good pictures and we made a book about it.

Girl 1: We did an expense chart.

Boy 1: No, the last project we did. I did volcanoes.

Girl 1: Yeah, it was a project about something we hadn't learned about.

Boy 2: No, it was something that we know a little bit about, but wanted to know more about.

Boy 1: These kinds of projects are just so fun. If we're not doing a project then we're not really happy just doing schoolwork. We're really motivated doing projects.

Teacher: Uh-huh. And that goes back to what you were saying about your interests. That brings in your interests by doing something that tweaks your mind, but you don't know enough yet to know enough.

Boy 1: It makes you learn.

Teacher: Right.

Girl 2: I like ones where you mostly have to write like our writing teacher, she'll usually get some type of picture off the internet and put it up on the board and then you just got to write about it, you know? Five paragraphs maybe.

Teacher: You like doing that?

Girl 2: Mmhm. For instance, the one I'm working on right now is about a cow and a dolphin in a swim race. The cow is named Burger and the dolphin is named Fish stick.

Boy 2: I hate writing!

Girl 1: I like projects that are like brain teasers; they're short but they're really hard. One time we had to do this one about a necklace and the different color beads cost a different amount and however long the string was, that cost a certain amount. Then, you had to add it all up to a certain amount of money and then you made a necklace.

Teacher: Cool. Okay, back to something you guys said earlier. Do you like to create or invent things?

All: Both!

Teacher: Okay. I'm going to ask some specific things. Do you like to create or invent stories? Poems? A song?

Boy 2: I think if you know what you're doing but if you don't and you mess up a lot, it's not very enjoyable.

Teacher: Okay, what about writing music?

Boy 2: Well if you write it out, maybe like a parody, and you actually have something in your head that you can back up off of. If you're just doing it out of nowhere, you're not going to get very far.

Teacher: I want to go back to you because you said that you like to take something apart and invent it or create it into something new.

Boy 1: Mmhm.

Teacher: Is that what you mean about actually taking a paper clip and redesigning it into something different?

Boy 1: Mmhm and I'll take my toys apart and then take some other toy apart and like cram the leg of a leopard into a bison.

Teacher: So kind of re-inventing the wheel but making a brand new wheel.

Boy 1: Yeah.

Boy 2: And like I said, like inventing and creating and recycling old things back into new things. My Uncle Hubert, he's across the street from us, he has a lot of scrap metal in his barn and we have a lot of wood because we just got done building a cabin.

Teacher: So you're talking even building?

Boy 2: Anything I can imagine. I build stools, chairs, rocking chairs and once I tried to build a grill but I couldn't build metal.

Teacher: Sounds like fun.

Boy 3: I can invent anything that could possibly be invented. Sometimes I like to make little models out of Lego's. I like to do electronic things; things that are dangerous and you could get shocked. I like doing painful things.

Boy 1: I do that sometimes like light big ole strobe lights.

Girl 1: I like creating like a picture.

Teacher: So more like artistic creations?

Girl 1: Yeah.

Boy 2: And impressing other people with doing it. I usually do because I want to impress my dad.

Teacher: Yeah. Do you do it to impress? (addressing girl 1)

Girl 1: Both to impress and for the fun of it. I like to create things like when I was little, like about five, I had to go to my mom's work and she had this big box of staples and I grabbed a whole bunch out of it and I made a whole necklace out of it. I still have it at my house.

Teacher: That's cool. What do you think are advantages of being in a cluster class? Are you all in the same cluster?

All: No.

Teacher: How many gifted are in your homeroom class?

Boy 1: Two.

Boy 2: Four including me.

Girl 2: Three including me.

Girl 1: Two including me.

Teacher: (addressing boy 3) Are you two in the same classroom?

Boy 3: Yes.

Teacher: Alright, so tell me what are the advantages to being in a cluster?

Girl 1: You get to learn a lot of new things that you're going to learn about in homeroom a month later so you get a head start advantage.

Teacher: Oh, when you're with Mrs. Calhoun you do?

Girl 1: Yeah.

Teacher: Okay, what about being in your homeroom with all the other children because you're not with Mrs. Calhoun all day long. When you're in your homeroom, you only go to Mrs. Calhoun once a week so all the rest of the time, you're with everybody else in your class. There are other gifted children in your class. Right?

Boy 1: Yes, we don't really communicate much because we're so spread out.

Teacher: Okay, so you don't work together?

Boy 1: No.

Teacher: How do you feel that you have other people in there?

Girl 1: I was going to say that we have an advantage because since we learn earlier, then we know it before them so that probably means that we're going to get better grades since we didn't just start that like yesterday.

Teacher: So advanced knowledge.

Boy 2: Like how I did that whole project on the Civil War and then next year in fifth grade we're going to learn a whole thing about Civil War so I already have a head start on it.

Teacher: What are disadvantages to being in a cluster class?

Boy 3: Trying not to act like you're smarter than everyone.

Teacher: Yeah.

Boy 2: Whenever we're in Mrs. Calhoun's class, we've been together for years back and we have a lot of the same thoughts.

Teacher: I want to know, not about being in her class because that's all of you together; I want to know about when you're in your regular homeroom with all the other children in the homeroom but there's still a small group of you together. What is it like?

Boy 1: One disadvantage is interruption.

Teacher: What do you mean?

Boy 1: Like you're in the middle of saying something and someone comes in like "oh yeah" you know? And then you forget what you were going to say.

Girl 2: I feel the same way but what I think a disadvantage is like on Thursday, we have to come

back back and do a whole bunch of make-up work from on Wednesday.

Boy 3: There's only two total in our homeroom so we are pretty much the same as a regular class but on tests and stuff, we usually make a lot better grades than other kids and they're all

looking up to us. When we're in groups we play jeopardy games for review and fun we're separated into groups, boys versus girls usually, and when we're on a hard question everyone sits there and looks at us. I know we're probably the smartest, but really? I mean, we're in a group.

Girl 1: If we're playing jeopardy or something and somebody gets a question wrong, they always look up to us. They ask "what's this? What is the answer?" then you try to answer it and you don't really know.

Teacher: Is that an advantage or a disadvantage?

Boy 2: Advantage, very.

Girl 1: Then you get it wrong and everybody is going to be like mad at you.

Boy 2: And when they get mad and start fussing and fighting with you, the teacher just decides to end the game because you can't behave.

Teacher: Okay, let me ask you this question. What's the advantage of you two being in the same class together? What's good about it?

Boy 2: We usually get to help the other kids and a lot of times they make better grades than before.

Teacher: Do you kind of teach them?

Boy 2: Kind of. Our teacher sometimes has a test we did that a bunch of the other people missed a lot on and I don't think it's happened this year but last year in my class I was the only TAG student and my teacher would let us have an old test and we would take the old test and stand up and review the answers and if someone raised their hand because they didn't understand that question, we would explain it to them if we got it right.

Teacher: Okay, what are good things about the three of you being together?

Boy 1: We have an advantage, kind of like getting the answers on a test right.

Teacher: You said there's four of you?

Girl 1: Yes ma'am.

Teacher: What are some good things about the four of you being in the same class together?

Girl 1: Well, two of them that are in my class are really good friends of mine.

Teacher: Being good friends are an advantage?

Girl 1: Not only that but sometimes one of my friends wants me to help her out so I can go up and ask the teacher because my friend needs help. I don't tell her the answer but I kind of help her.

Teacher: Is she a TAG student too?

Girl 1: Yes ma'am.

Teacher: So you can work together?

Girl 1: Yes and then once I explain it to her she gets it.

Boy 1: I'm the only boy in our TAG class so I can't really connect with anybody.

Teacher: Have you ever been the only gifted child in a class before?

Boy 1: Yes.

Teacher: Nobody else was gifted?

Girl 1: I actually only started tag last year.

Teacher: So what was it like? Were there good things about being the only?

Boy 1: It was pretty much the same as regular. Last year at primary school was the first year I was in TAG. No one really cared, that was my first year and I hadn't learned much yet.

Teacher: Is there anything else you want me to know about how you learn, how you feel about being a TAG student.

Boy 3: I think as a TAG student we have more responsibilities and for some of us, I think that's actually really good because you have more responsibilities you know, more things that people trust you with. If you do it right, like if we had a class pet and the teacher told us she trusted us to take care of the pet over the weekend and we did, that would gain some trust. Then she would trust us more and we would get to do those things more.

Boy 2: Whenever you're a cluster in the class, you can connect with the people in your class. It's good to have mentally knowing that you have good friends in your class that you know very well, that you've known for years. It's not really that much about responsibility it's more about letting people rely on you because you're lucky to have a lot more stuff than everybody else in the school because if you're in TAG then you're one out of millions that could have been but you're making it. After all that, you have more things to do, and sometimes in the TAG class you have to work on the yearbook, sometimes you have to go around and monitor on career day and we do the news. Then we go every Wednesday to relieve our stress from regular classrooms.

Girl 1: I agree about releasing stress. I was going to say that another thing that kind of helps me learn and keeps me motivated is my teachers. They keep pushing me and helping me get better and better at a topic that I'm kind of struggling with. Now that they pushed me and made me better and better, I can pick it up like that and now I know that topic very well.

Girl 2: He was right about the stress thing. It can give you a lot of stress but you're really lucky if you are actually in TAG because you get a bunch of fun stuff like go on field trips.

Teacher: You're more stressful when you're the only TAG student in the class or when you're with another group?

Boy 2: Probably 50/50 because it's good and bad. It's good to have another student that's in TAG with you in the class but it's also good if you notice you're in the top of the class and you're helping them.

Boy 3: In Mrs. Carrie's class, she had us all together on one day, last year it was Thursday; I don't think that was as good as this year because we were all together. There were more distractions.

Teacher: You like it better in a small group then?

Boy 3: Mmhm.

Boy 2: When the three of us are together, we play a lot.

Teacher: Alright, I'm going to stop now.

Interview E

Teacher: This is fifth grade focus group. Okay, the first question is really about what your interests and your hobbies are and whether or not those interest or hobbies you have, can you do them at school?

Girl 1: Well mine you can do when you get to the middle school. I like cheerleading and you can do those when you get to the middle school and high school. We're actually having tryouts in a couple of weeks.

Teacher: Okay, only when you get to the middle and high school, not here.

Boy 1: Something that I would like to do is have a band to match the middle school and high school. There was also supposed to be spring training for baseball at the middle school.

Teacher: So you like sports?

Boy 1: Sort of.

Teacher: Can you do any of them here?

Boy 1: You can't do any sports here but we always have activities that come around.

Teacher: With sports as your interest, what do you do about being able to do them at school? Is there any outlet or any way for you to do them here at elementary school?

Girl 1: The only thing that you can really do in elementary school like the Rec., you can go out to the Rec. and do that kind of stuff but there's nothing here at this school.

Teacher: If you have sports or cheerleading or anything? Okay. What are some of your interests that you like to do that aren't sports related?

Girl 2: Some people make little bands.

Teacher: Like rubber bands?

Girl 2: Yeah like crafts.

Teacher: Can you do crafts at school?

All: In art.

Girl 2: And after CRCT you'll get certain time where you can like draw and stuff.

Teacher: Some free time?

Girl 2: Yeah, some free time.

Boy 2: Well we can't really do the bands here at school because we'll get them taken up.

Girl 2: Well there are certain rules about them.

Teacher: Okay, well if you are a crafty person, that's your interests, can you pick what crafts you want or do you have to do what a teacher says? What do you do if you're crafty?

Girl 1: Well our art teacher will actually assign certain weeks she'll have different crafts for you to do.

Girl 2: You can do them in art class. It depends on what time of the year if we can do them in class. Like towards the end of the year we get to draw or do that kind of stuff. And like towards the beginning of the year you get to make school stuff, but in the middle of the year it's more learning time.

Teacher: Well what your other interests and hobbies?

Boy 2: One of my hobbies that I can do at school, I'm pretty sure that every kid does at school, is reading.

Girl 2: Reading, yeah.

Girl 1: Yeah.

Boy 3: Some people don't like reading though.

Teacher: No, but those of you who do, yeah you can do that here at school. What other things are interesting to you?

Boy 1: Things that are interesting to me are learning new different things about careers and stuff.

Teacher: Okay. Are you able to do that?

Girl 2: Yes ma'am. We actually had a project at the beginning of the year. Other kids did like a little poster board but we went all out with it. They just did poster boards about theirs.

Girl 1: We did movies, tri-fold boards, PowerPoints, filming videos about it and stuff like that.

Girl 2: The school is having certain career classes about different careers that every student has to go to.

Boy 2: Like career clusters; we have to take those classes. Then we'll go more towards them in high school and middle school.

Teacher: Yeah.

Boy 1: I would kind of call it a program because it's like all the favorite teachers have to give you a career cluster because some students may even pick the same careers but the teachers will let them work together to see if they can come out on top.

Teacher: Okay, well that brings me to my next question. When you're working what is your own preference? Do you prefer working totally by yourself, a small group, maybe two or three, or maybe even a larger group than that like four, five or six? Or do you even like whole groups?

Girl 1: I like a small group like partners or three people. That's usually what we do in TAG like in class we usually do classroom partners. I personally like doing it as partners like being able to pick the person you work really, really well with and work with them. Instead of the teacher doing it, pick somebody that you work really good with and you have the same interests as them.

Boy 2: I personally prefer small groups because if you're in a large group, there could be some people in it that don't get along with some of the other people in the group.

Girl 2: Yeah, you don't get to share your ideas as much as when you're with partners. You can't really share your ideas as much because you have to take turns.

Boy 2: When you're in smaller groups, you can all express your ideas without any arguments because there's a lower chance of having people that don't get along being in a group together.

Girl 1: I go with partners because I enjoy picking my partner, instead of like if the teacher picks my partner, there are some people that I just don't get along with.

Girl 2: Yeah, me and Sam when we're in TAG we usually partner up together because we work so well together. We usually do that in everything because we work so well together.

Boy 1: My opinion is I think if you have two people working together, they have to be working together for a while because if you just partner up with somebody that you don't get along with it's going to be chaos.

Girl 1: If you pair up with someone you know, they're kind of going to get along a lot better because they already know each other.

Boy 2: Also about the larger groups, if there are people that don't get along in the group then they'll be arguing and it will prevent the rest of the group from working and it'll make it where they can't get as much done.

Teacher: Okay. So now talking about working in the groups, what about projects? What kinds of projects do you like to do?

Girl 2: Personally I like to do science projects. It's a little more in depth and more challenging and hands-on when you do science.

Students: Yeah they are a lot of fun.

Teacher: Can you think of an example of the best science project you did?

Girl 2: A cell project. At the beginning of the year we got paired up or got in groups and we made a model of a cell. We got in groups the first day and we picked what we wanted, a plant cell or an animal cell. Then each person got assigned what they needed to bring in for the project. Then we made it during the day and Mrs. Folsom kind of went around and helped everybody. They actually turned out really good.

Teacher: Okay, what other kinds of projects?

Boy 2: Well we had our science fair projects.

Girl 2: Yeah, I won 3rd place one time. It was the first year that I did it That was really fun.

Teacher: Do you do science fair every year?

Students: Yes ma'am.

Boy 2: Next year in middle school you'll have to do it.

Girl 2: Yeah, here it is optional, but in middle school you have to do it. You have to do the social studies fair too.

Teacher: Oh, you have social studies fair too? Okay.

Boy 1: My favorite kinds of projects are social studies because to me social studies is more about the history and learning about the history and finding out about religions. Like say you're part Indian. Well you can learn about your religion or how they were back then.

Girl 2: Yeah you learn like how you got to where you are right now.

Boy 2: Yeah, sometimes you can even learn like whose in your family, like your family tree.

Boy 3: I kind of agree with him on the social studies thing. I like those kinds of projects because it's not as a class, so you yourself, or with a partner, can go more in depth onto a social studies topic that you like and learn more about it. Then you can share it with the class so that everyone will know about it.

Boy 1: Yeah, most of the time our teacher will even let us bring our technology to school.

Girl 2: Yeah, that's what I like about this school. We have a lot of technology, especially in TAG. We get to use technology. It's not like we get on the computers only when the teacher tells us too. Like we can bring our own technology and use it and it helps us. We also have I-pads and the teacher can check out the I-pads for us to use.

Teacher: Any class can do that?

Girl 2: Yes ma'am. The teacher can check them out and take them back to their class. It has an I-pad cart and it charges the I-pads. Then when they are done they go turn them back in and different classes can use them.

Boy 2: The I-pads can be used when people are taking a common assessment, the I-pads can be used to put the tests into the system without having to call like 5 kids at a time back to the computers. So it really saves time.

Boy 3: Speaking of technology, there's these little scanners that the teachers have whenever we take a test, but we don't really use those that much. Our math, social studies, and science teacher wants them though because she says they are a lot faster.

Teacher: Yeah they are. They're very fast. Okay, think about how you are. Do you like to create things and invent things? And here are some things that you can put into creating and inventing; like building, models, stories, music, poems…

Girl 2: In TAG we are actually building model rockets for one of our projects.

Teacher: Do you like building?

Students: Yes!

Girl 2: When we were in the primary school we actually worked with Legos an made them work with the computer.

Teacher: Yeah, the robotics?

Students: Yes ma'am.

Boy 2: Yeah, that was fun. They are actually like little robots.

Boy 1: Speaking of the poems, was that the tessellations that we di poems for?

Students: Yeah.

Girl 2: We actually made tessellations and wrote a poem along with them and we made a book.

Teacher: Did you all enjoy that?

Students: Yeah.

Boy 3: That was very fun.

Girl 1: I liked that it was challenging and not something that was very easy.

Girl 2: Yeah, like in class most of our stuff is very easy for us, so we like to go to TAG whenever we can to get more challenging stuff for us.

Boy 3: With the poems we also did a project where we could pick a place and write about it and all that and make a movie about it and everything. A couple weeks or months ago we also did a picture with it and we also had a little paper with information on it. Like we drew a picture and it had information about the place.

Girl 2: Yeah, we made our own book about that too.

Boy 3: We make a lot of books.

Boy 2: Speaking of the TAG projects and stuff, since we only go there once a week, the projects that we have there take a lot more time. They can even take several months.

Girl 2: Yeah, like in class we can probably do a project in a couple of days or a week or two. But there it takes a couple of months. And sometimes we don't even go once a week. Like with the CRCT, some classes didn't go. Our class did because we went in the afternoon after the CRCT.

Boy 3: Sometimes the TAG teacher is out, or she has to go to a teacher workshop, or she has to check on someone that's sick or something like that.

Teacher: So they're long projects?

Students: Yeah.

Boy 2: Sometimes Mrs. Calhoun might have to leave in the middle of the day so we don't have as long to work on them.

Girl 2: Yeah, so we don't have as long to work on them, so they take a lot longer than usual class projects.

Boy 1: Speaking of books, our book got nominated; it got ranked to be one of the best in the country.

Girl 2: They choose a certain amount of books and ours was chosen for one.

Teacher: That is cool!

Boy 2: From the student treasures, they'll submit the ideas and then make it into a book.

Boy 3: Yeah I believe it was the place one, where we picked a place.

Boy 2: Yeah the travel project.

Teacher: Okay, think about being in your cluster classroom. How many TAG people are in your homeroom?

Students: About 5; yeah, around 5 each.

Teacher: Okay, think about being in the cluster classroom. What do you think are advantages of being in a cluster classroom? What are some advantages of having 4 other people with you?

Boy 3: Well there aren't as many people, so there aren't as many people that don't like each other.

Girl 2: Well, with our class, most TAG kids, we really get along because we have someone that understands.

Teacher: They understand you?

Girl 3: Yeah because they know how hard it is sometimes, like having to catch up on classwork.

Boy 2: Everyone in our classes that aren't in TAG say, "Oh I wish I was in TAG because TAG is so easy."

Girl 2: Yeah, they say, "TAG is easy. Y'all get a day off." But it's not.

Boy 2: And also, some people just sign up for the field trips. They think the field trips are all it's going to be. Then when they get a project to do, they lack on it and they don't get it finished. Eventually they get kicked out of TAG.

Girl 2: They think we go on field trips just to go on them, but they're actually learning experiences. We have to pick places that are appropriate for school. That's how we went to Andersonville for the Civil War, the science museum to learn about science, and stuff like that.

Boy 2: We went to Stone Mountain.

Teacher: What are some more advantages to being in a cluster?

Boy 3: You are with some of the smartest people and some of the highest people in your grade. Like in your regular class, one person might not know it.

Girl 2: Certain people like me get to help out. So if there was one person in TAG then it would be just one person helping.

Boy 2: Like say with the career project, there were people in TAG that had already done the project earlier in the year going around helping people. If there was only one person in TAG then it would've been hard. But now since there are 5 TAG people with 20 people, that's going to be hard trying to help 4 people at once.

Teacher: What are some of the disadvantages?

Boy 2: Missing out on classwork, definitely.

Girl 2: Yeah, missing out on classwork and it's so hard to catch up. Like on unit tests that we have that are like 50% of our grade, we have a hard time catching up.

Students: Yeah.

Teacher: What are the disadvantages of being in the cluster? Because missing classwork would happen even if you were by yourself, right?

Boy 1: To me, there are barely any disadvantages.

Boy 3: I don't know of any.

Girl 2: Yeah, I don't know of any either.

Teacher: Okay, so give me some more good things about being together.

Boy 1: To me, the key work to working together or working with a partner is communication. That's all it takes, communication.

Teacher: So is that a good thing about being together?

Boy 1: Yeah because we get to communicate a lot.

Girl 2: Yeah like if you were having trouble with something or didn't know when something was done, you could go to another TAG person, "Hey, when is this done, or when is this due for

class?" and they would know that. But other people in the class that aren't TAG, they wouldn't know. And the teachers don't know everything about TAG so they wouldn't know it either. So it just kind of helps to have other people with you.

BOY 1: But it's really hard being in TAG too because you have to do all of your regular classwork. Some teachers won't let you go to TAG if you don't get all of your work done.

Teacher: Okay, now shift gears. Have any of you ever been the only gifted one in the class?

Students: No.

Girl 2: I have. Actually in 2nd grade I was the only one in my class.

Teacher: So tell me, do you remember good things when you were the only one?

Girl 2: Umm, I don't know. I actually like it better having more people. Like in 2nd grade it was kind of like me just leaving class to go to TAG. I didn't really like me being the only one in my class because it was kind of harder to catch up on stuff.

Boy 2: Because if you were alone in TAG then there would be no other person to help you out on the stuff that you missed out on. And the other kids couldn't help you because they were doing their work.

Boy 3: And also, the good thing about the TAG room being in this school instead of the primary is that when it was in the primary, when you went to TAG you teacher didn't know if you were absent or went to TAG because you were in a different school.

Boy 2: You would completely miss out on homework because you wouldn't go back to your class at the end of the day.

Boy 3: Well that's a good thing.

Girl 2: Like someone took you there in the morning and someone picked you up in the afternoon.

Boy 2: Then you would get off at the primary school instead of getting off here.

Boy 1: To me a good idea would be joining both of the 5th grade TAG classes together and put them on different days. So bring the TAG class from the primary school to this school so they could go ahead and see what they're going to be looking at in 3rd and 4th grade.

Girl 2: What I wouldn't like is if grades had to come together because I think the 5th grade TAG goes good together, the 4th grade goes good together and 3rd goes good together. I think if we all came together it would be not as good.

Teacher: Yeah, you have different standards.

Girl 2: Yeah you're all learning different things.

Teacher: You guys have a big TAG group. Most schools don't. Is there anything else that you think that I really should know about being a TAG student, what it's like being in a cluster class, rather than being just the one?

Girl 2: I think it really has more advantages than disadvantages.

Boy 2: I think one really good thing about being in TAG is that there's these magazines called Super Science and they inform us because one time we got one and it told us facts about ants, and a hotel being built underwater, and stuff like that. It's really cool.

Students: Yeah.

Boy 2: And also, sometimes it helps us out, like sometimes it gives us stuff about cells and sometimes we are learning about cells in our regular classroom.

Teacher: Okay we are out of time since you guys have got to get to lunch.

Interview F

Teacher: Okay this is the 3rd grade focus group at Worth County. First question: What kinds of things do you like to do? What are your interests, your hobbies, and can you do them at school?

Girl 1: I like reading, and drawing, and singing. I can read at school, but drawing and singing, I have to get permission from the teacher.

Teacher: Okay, do you have classes for those that help you pursue your interests in drawing and singing?

Girl 1: Yes, Mr. Oxford teaches music and Mrs. Griffin teaches art.

Teacher: So you can do them a little bit.

Boy 1: My hobby I can't really do at school.

Teacher: What is it?

Boy 1: Fishing. I love fishing! Every day at the end of school when my dad picks me up, we go straight behind the house to the pond when we get home.

Teacher: That would be kind of hard to do at school, unless you went to a school with a fishing pond, right?

Girl 1: And I also like going outside and playing sports, which you can also do in PE.

Teacher: Okay, so you do like sports but the only time is during PE?

Girl 1: And sometimes at recess.

Teacher: Okay.

Girl 2: I like doing gymnastics.

Teacher: That's kind of hard to do at school, isn't it?

Girl 1: I use to do gymnastics but now I don't.

Boy 1: They do it at recess.

Girl 3: My hobbies are gymnastics, soccer, drawing and I can't remember anything else.

Teacher: So only the drawing you can do here, can't you?

Boy 2: I like doing most sports and drawing.

Teacher: Okay, I want you to think about how you like to work.

Girl 3: The other is music. I like playing instruments and stuff.

Teacher: Oh, well can you play an instrument here?

Girl 1: Sometimes Mr. Oxford passes around instruments.

Teacher: You don't really get to have a violin class or anything like that.

Boy 2: They have guitar classes.

Girl 2: That's only for fifth grade.

Teacher: Oh, okay. Tell me about how you like to work. Do you like working alone? Do you like working in a small group like maybe two people, three people? Do you like working in a group that may be four or five people? Or do you just like working with the whole class?

Girl 2: I like working with a group so you can kind of talk with each other.

Teacher: What kind of group?

Girl 2: Like four or five people so you can kind of bounce off ideas.

Teacher: Okay.

Girl 1: I like working by myself but if I had to work in a group, it would just be two people.

Teacher: Okay but it's more like you don't really want to work with a partner unless somebody says you have to?

Girl 1: It depends like who the person is. If they're annoying and loud, I can't work with them.

Teacher: Okay.

Boy 1: I like working in small groups.

Teacher: A two or three kind of small group?

Boy 1: Yeah, two or three.

Girl 3: I like doing working alone or in small groups.

Boy 2: I like working with a group of two or three people.

Teacher: What's an advantage of working with a group of two or three people?

Girl 2: If there's an answer one person doesn't know, you could see if anybody else knows it.

Teacher: Okay.

Boy 1: Or if you had two different decisions and you had to put them together, it would be harder to do it with a bunch of people instead of like two or three.

Teacher: What about in math? Do you ever get together to work on problems in math?

Girl 1: Sometimes.

Teacher: Does it help having somebody help you?

All: Uh-huh.

Boy 2: Because then if you get the wrong problem, the other person is like "Wait!" Because they don't have that answer then you got to look back over it and see what you messed up on.

Girl 2: Or what the other person messed up with.

Teacher: Think about projects. Do you like working on projects? What kind of projects do you like to do? Can you think of any projects that you did do that you liked doing?

Girl 1: I like explosive projects like a volcano. I like rockets but I've never done that.

Teacher: Never done it but you would like to do a rocket or something.

Girl 1: I'm going to do one soon. I'm actually going to take some diet coke bottles and I'm going to put peppermints and I'm going to make it explode!

Teacher: Wear a raincoat.

Boy 1: And safety goggles!

Teacher: My class did it last year; we needed a raincoat.

Boy 2: I like writing stuff and putting it on a poster board. Like getting pictures and stuff.

Girl 1: My friend Zack in second grade, he actually did a volcano.

Teacher: It's fun to see isn't it?

Boy 1: On my projects, I like doing science projects. There's one that I would like to do that I saw in the media center. It was like what made the coke fizz up more? What made it fizz up more than Mentos was Skittles!

Teacher: Really?

Boy 1: Yes!

Teacher: You're being honest?

Boy 1: Yes!

Boy 2: What would be cool is turn it upside down and drill a hole in the bottom of the diet coke bottle and drop the skittles in the hole so it would make like a volcano of diet coke shooting straight up into the air.

Teacher: Do you like to create or invent things?

Boy 1: Create!

Girl 1: Invent!

Girl 3: I like both.

Boy 2: I like both.

Teacher: Have you guys ever done the elephant toothpaste?

All: No!

Boy 2: My sister wants to do it.

Teacher: We're doing it next week.

Girl 2: It is hilarious.

Teacher: You're in third grade so you do heat, right? Yeah, it's a heat experiment.

Girl 2: It's funny because you mix the stuff you need to mix together and then it looks like a big toothpaste elephant and it goes everywhere! You can look it up online and they actually had a contest once and I think it was the red one, I don't remember what colors there were, but the red one wouldn't stop falling. It just kept going and going.

Girl 3: I like doing science projects like habitat projects.

Teacher: So you do with animals and habitats, okay. Let's go back to the creating and inventing.

Girl 1: I think both because you can invent and create.

Boy 1: They're basically the same thing. When you're inventing, you're creating something and when you're create something, you're inventing something.

Teacher: I guess when people think about inventing, they don't think about writing stories, poems, or songs. So that's why I put the word create in there because I also think that's writing a song or writing a story.

Girl 2: Charlie and I actually created a new food. I don't know what he created but I created a new food called cookcreamsicleinger. It's got butterfingers in it, it's got cookies in it, it's got ice cream in it and it's got popsicles in it. It's supposed to be freezing cold.

Teacher: Have you tasted it?

Girl 2: No, I haven't made it yet. We've only write about it.

Teacher: That would be an invention right? You've created it, now you've got to invent to see if it really does work.

Boy 1: I made something called a Mahi-mahi volcano. It's got broccoli, lettuce, hot sauce, Mahi-Mahi and it's stacked up like a volcano and the hot sauce is in the middle and the hot sauce comes out and runs all over it and it's a type of sushi.

Teacher: I want you to think about this; you're all in a cluster class, right? (addressing girl 2) You're the only TAG student in your class now?

Girl 2: No, there are only two TAG students.

Girl 1: There are four in mine.

Boy 1: We have a lot.

Teacher: And how many are in yours?

Girl 3: I think seven.

Teacher: Okay, what do you think are the advantages to being in a cluster class? In a regular classroom, what's the advantage of having the other TAG students in there with you?

Boy 1: They know a lot of the stuff that we know, so if we forget something they can help us remember it.

Teacher: Alright. What are some other things?

Boy 1: There are people that you know better because you see them all the time.

Girl 2: Yeah, you get to know them better. They build up more in your friendship.

Teacher: Are you maybe more comfortable?

All: Yes.

Teacher: Okay, what are the disadvantages to being with other TAG students in your room?

Girl 2: Some might think that since they're in TAG, they're better than everybody else and stuff. They might start acting bossy and stuff like "I know that and you don't so you're so dumb".

Teacher: Okay.

Girl 3: And that's just not nice. That's happened to me before.

Teacher: Another TAG student acted that way in your class?

Girl 3: Yes ma'am.

Girl 1: There's two here, I don't want to say their names but we were just playing and we were like voting and stuff and we would say this and she just kind of got angry because she didn't get voted as many as us and she just got mad and started ripping the paper up. She got so mad.

Teacher: And this was a TAG student in your class? What would be some things that would be a disadvantage though?

Boy 2: Sometimes they tell you the same thing over and over again like they know more than you and they're saying the same thing over and over again to you.

Teacher: Maybe you see them too much.

Boy 2: It kind of gets annoying.

Teacher: Give me a list of good things about being together in a cluster.

Girl 2: If you want to work with someone smarter than the rest of the class, you can get with a TAG student.

Teacher: So you have an automatic partner or and automatic group?

Girl 1: Sometimes usually whenever we partner up together, I will get put with somebody that needs a little help. If I know it and they kind of need help with it, she'll put me and that person together so I can kind of help them with it.

Teacher: So all of the TAG students in your class can help other students? Okay.

Girl 1: Yeah but there's only two students.

Teacher: Right.

Boy 2: Sometimes when we partner up she will put us with other TAG students so we'll just know the stuff and just work together.

Teacher: Okay. Have any of you ever, in like first grade or second grade, been the only TAG student in the class?

Boy 1: No, last year especially, there was a huge class. There were at least 11 people.

Teacher: What were the rest of the kids? You had other children too, right?

Boy 2: There was like two classes and out of both the classes, 18 of us was TAG students.

Teacher: That's a lot. Okay, what was it like when you were the only TAG student in your class?

Boy 2: I had to try to help everyone.

Girl 2: I was the only TAG student I think in kindergarten.

Teacher: What was it like?

Girl 2: In the rest of my class, I like to try to help people because they weren't as brainy so I would like try to help them know what I knew.

Teacher: You probably knew how to read before everybody else.

Girl 2: Yeah, I probably knew how to read the year before I was in Pre-K maybe.

Teacher: Okay. Do you remember any other good things about being the only one in there?

Boy 2: Yeah because you didn't have the other TAG students to compete with you.

Teacher: You were top notch?

Boy & Girl 2: Yeah.

Girl 1: It's supposed to be only two people in our class, if one of us is starting to get low grades, there will only be one person left. So it'll be like that person helping everybody else.

Teacher: Are you saying it's better to have more than two TAG?

Girl 1: It's better to have more because if you only have one, the teacher is going to try and get that one person all around trying to help everybody else.

Teacher: Okay.

Girl 2: I think one is a bit easier because you might be caught on by a teacher more and you might be a star student a lot. I'm saying this because I am definitely a teacher's pet.

Teacher: (laughing) Okay. Is there anything else that you would like to tell me that you think I should know about being a TAG student? About being in a cluster classroom? Anything that you think would be important?

Boy 2: When you go to TAG, if you have a really good friend that you know a lot and they don't make it in TAG then every day you go to TAG, you won't be able to see them.

Teacher: So when you leave to go to TAG, you're not with your friends because you guys go to TAG and you're gone all day. At my school they just go every single day but for only one class.

Boy 1: In kindergarten when I was the only TAG student, I went for like an hour every day.

Teacher: How was that? Was it bad?

Boy 1: No because I got some time away from the rest of the class.

Girl 1: And it wasn't as noisy.

Boy 1: I got some time away from the class to relax my brain.

Teacher: Okay. Is it that way now when you go to Mrs. Calhoun's class?

Girl 2: I had this very good friend and we've never had a fight before and whenever I go to TAG I don't see her so I'm just sad.

Girl 1: I have a really best friend and she has really good grades but she has never made it to TAG and you got to TAG and come back the next day it's like they're talking about what you did.

Teacher: You miss what you missed when you're gone?

Girl 1: Mmhm. Then you're like missing out on stuff like usually if you're in TAG and they're talking about something new, you come back the next day and you kind of have to like catch up with them.

Boy 2: Since we were gone on Monday and Tuesday on our TAG field trip, we had to catch up a lot.

Teacher: It was just a TAG field trip; it wasn't all of third grade?

Girl 1: No.

Teacher: Oh, okay. I thought it was a third grade trip.

Girl 2: We usually start a new writing topic on Monday and by the time we were there we already had to start revising so we had to write our pre-writing, we had to write our draft and we had to do that so it was actually kind of hard because you would want to like get it done so you wouldn't have to do as much.

Girl 1: I was really tired because of that field trip and my stomach was just hurting, I don't think it was because of that field trip and today whenever I came back I had like a whole bunch of work to do in writing. Especially over those days that I was gone.

Boy 2: Everybody was just about finished and I still had to write about three more paragraphs on mine so I had to write really fast today and get caught up.

Teacher: Because I kept you in here for too much today?

All: No.

Boy 1: We did surveys and then I had to go do another test.

Teacher: I appreciate you guys having to go back and make up the work.

Girl 1: I actually like being here because there's an actual teacher here pushing you and pushing you and getting onto you.

Teacher: I'm pushing you and pushing you to think.

Girl 1: No, like not saying "don't do this, don't do that"

Teacher: Okay, I'm going to stop here.

Girl 1: If you kind of get to know each other better you get to learn how to make friends.

APPENDIX I

Institutional Review Board Approval

Institutional Review Board (IRB)
for the Protection of Human Research Participants

NEW PROTOCOL APPROVAL

PROTOCOL NUMBER: IRB-03059-2014 **RESPONSIBLE RESEARCHER: Mimi Wetherington**

PROJECT TITLE: Elementary Talented and Gifted Students' Perceptions and Achievements in Cluster versus Pull-Out Classes

APPROVAL DATE: 4/22/14 **EXPIRATION DATE: 4/21/15**

LEVEL OF RISK: ☒ Minimal ☐ More than Minimal

TYPE OF REVIEW: ☒ Expedited Under Catetory/ies :6&7 ☐ Convened (Full Board)

CONSENT REQUIREMENTS:

- ☒ Adult Participants – Written informed consent with documentation (signature)
- ☐ Adult Participants – Written informed consent with waiver of documentation (signature)
- ☐ Adult Participants – Verbal informed consent
- ☐ Adult Participants – Waiver of informed consent
- ☒ Minor Participants – Written parent/guardian permission with documentation (signature)
- ☐ Minor Participants – Written parent/guardian permission with waiver of documentation (signature)
- ☐ Minor Participants – Verbal parent/guardian permission
- ☐ Minor Participants – Waiver of parent/guardian permission
- ☐ Minor Participants – Written assent with documentation (signature)
- ☐ Minor Participants – Written assent with waiver of documentation (signature)
- ☐ Minor Participants – Verbal assent
- ☐ Minor Participants – Waiver of assent
- ☐ Waiver of some elements of consent/permission/assent

APPROVAL: This research protocol is **approved** as presented. If applicable, your approved consent form(s), bearing the IRB approval stamp and protocol expiration date, will be mailed to you via campus mail or U.S. Postal Service unless you have made other arrangements with the IRB Administrator. Please use the stamped consent document(s) as your copy master(s). Once you duplicate the consent form(s), you may begin participant recruitment. **Please see Attachment 1 for additional important information for researchers.**

COMMENTS: Please take out the "Information Contacts" section right before the "Agreement to Participate". Address how data will be stored and protected.

Wilson Huang 4/22/14

Wilson Huang, Ph.D., IRB Chair Date

Thank you for submitting an IRB application.

Please direct questions to irb@valdosta.edu or 229-259-5045.

Form Revised: 12.13.12

NEW PROTOCOL REVIEW REPORT
Attachment 1

ADDITIONAL INFORMATION FOR RESEARCHERS:

If your protocol received expedited approval, it was reviewed by a two-member team, or, in extraordinary circumstances, the Chair or the Vice-Chair of the IRB. Although the expediters may approve protocols, they are required by federal regulation to report expedited approvals at the next IRB meeting. At that time, other IRB members may express any concerns and may occasionally request minor modifications to the protocol. In rare instances, the IRB may request that research activities involving participants be halted until such modifications are implemented. Should this situation arise, you will receive an explanatory communiqué from the IRB.

Protocol approvals are generally valid for one year. In rare instances, when a protocol is determined to place participants at more than minimal risk, the IRB may shorten the approval period so that protocols are reviewed more frequently, allowing the IRB to reassess the potential risks and benefits to participants. The expiration date of your protocol approval is noted on the approval form. You will be contacted no less than one month before this expiration date and will be asked to either submit a final report if the research is concluded or to apply for a continuation of approval. It is your responsibility to submit a continuation request in sufficient time for IRB review before the expiration date. If you do not secure a protocol approval extension prior to the expiration date, you must stop all activities involving participants (including interaction, intervention, data collection, and data analysis) until approval is reinstated.

Please be reminded that you are required to seek approval of the IRB before amending or altering the scope of the project or the research protocol or implementing changes in the approved consent process/forms. You are also required to report to the IRB, through the Office of Sponsored Programs & Research Administration, any unanticipated problems or adverse events which become apparent during the course or as a result of the research and the actions you have taken.

Please refer to the IRB website (http://www.valdosta.edu/ospra/HumanResearchParticipants.shtml) for additional information about Valdosta State University's human protection program and your responsibilities as a researcher.