ABSTRACT

ROBINSON, LINDA PIGOTT. What Works With Secondary Gifted Learners: A Qualitative Case Study of the Curriculum and Instructional Approaches of the North Carolina Governor's School. (Under the direction of Carol A. Pope, Ed.D.).

The need to develop academic talent in our country has never been greater. However, because secondary gifted program services usually entail offering honors, Advanced Placement, and International Baccalaureate courses, little research has been done nationally on what constitutes an appropriate secondary curriculum for academically gifted learners.

The Governor’s School of North Carolina, the oldest such program in the nation, developed a curriculum in 1963 and has implemented it for fifty years. The purpose of this qualitative case study was to examine how the Governor’s School’s curriculum and instructional approaches have addressed the needs of secondary academically gifted learners. Rich, descriptive data included content analysis of four major curriculum documents; six classroom observations; and interviews with ten 2012 students, fourteen past participants representing each of the five decades, and eight key administrative and curriculum leaders. Parameters for this study focused on the content areas of mathematics, English, social science, and natural sciences, as well as two interdisciplinary courses. Constant comparative analysis of all data employed a priori coding using the three dimensions of the Integrated Curriculum Model (ICM) as the theoretical framework. These three major dimensions are 1) advanced content knowledge, 2) higher order thinking and processing, and 3) major themes, issues and ideas of disciplines through interdisciplinary instruction. Findings confirm that all three of these dimensions, which have proven to be effective with academically gifted learners, are integral components of the Governor’s School’s curriculum. Other themes which emerged as
significant and beneficial elements of the instructional program included a focus on contemporary theory, the value of interdisciplinary connections within a curriculum, the need to address affective concerns of gifted learners through cognitive approaches, and the power of Socratic discussion. Interviewees’ comparisons to both their secondary and college experiences highlighted the uniqueness of the Governor’s School’s instructional program. Implications of the research relate to overall differentiated instruction for academically gifted learners, to regular high school programs for academically gifted learners, and to special programs for academically gifted learners. Lifelong benefits described from the Governor’s School’s curriculum and instructional approaches accentuate the need for appropriate, challenging differentiation for secondary gifted learners in order to develop all students’ abilities.
What Works with Secondary Gifted Learners: A Qualitative Case Study of the Curriculum and Instructional Approaches of the North Carolina Governor's School

by
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CHAPTER 1

When we were a lusty, brawling adolescent of a nation, we spent our physical resources as if there were no tomorrow. We now find to our sorrow that there is. This generation cannot afford to be a spendthrift in intellectual resources as it has been in its physical gifts. The price of failure is too high. (Gallagher, 1965, p. 74)

Introduction

The need to develop the academic talents of secondary students in our country has never been greater. “No Child Left Behind” legislation (Public Law PL 107-110) of 2001 focused attention on remediation, but omitted the needs of high-end learners as a sub-population. Because the goal of the legislation was baseline mastery of the standard curriculum for all learners, high-end learners who had already mastered the content were not well served. As a result, students capable of developing outstanding abilities are still considered “at risk,” as they were described in the report A Nation at Risk (1983) which estimated that the academic achievement of over half of gifted students performed below their abilities. In 1993, a similar claim was made by the report published by the United States Department of Education and entitled National Excellence: A Case for Developing America's Talent (Ross, 1993).

In a broad range of intellectual and artistic endeavors, America's most talented students often fail to reach their full potential ... Despite sporadic attention over the years to the needs of bright students, most of them continue to spend time in school working well below their capabilities. The belief espoused in school reform that children from all economic and cultural backgrounds must reach their full potential has not been extended
to America's most talented students. They are underchallenged and therefore underachieve. (p. 2)

Neal and Schanzenback (2010) described the relationship between the underperformance of academically talented students and an effort like “No Child Left Behind” legislation by noting that a “proficiency count system does not reward schools for improving student performance unless the improvements bring the students up to a specific proficiency standard” (p. 4). The underperformance of highly capable students has been documented in multiple ways. Using the data from 81,767 students in math and 93,182 students in reading from more than 1,500 schools in thirty states, Xiang, Dahlin, Cronin, Theaker, and Durant (2011) concluded that only 57.3% of high-achieving third-grade math students (90th percentile and above) remained high achieving by eighth grade as measured by the Northwest Evaluation Association (NWEA) and its Measures of Academic Progress (MAP) assessments. Only 55.9% maintained performance in the 90th percentile in reading. Furthermore, in reading, all other groups of students demonstrated faster rates of improvement than those high achievers. To exacerbate matters where the needs of high-end learners are concerned, no federal funding has been provided specifically for research on gifted learners since 2010 (Milligan, Neal, & Singleton, 2012), and services for academically gifted have never been federally mandated or funded.

Now forty-five states are implementing Common Core State Standards. Particularly with the implementation of these standards, attention needs to be invested in how to address the distinctive learning needs of secondary gifted learners in the content areas (VanTassel-Baska, 2012). No single set of standards will ever address all students’ learning levels. As
Nel Noddings (2009) stated, “We should be deeply troubled by the suggestion that economic equity can be achieved by forcing the same curriculum and standards on all children” (p. 431). Even the authors of the Common Core Standards (Common Core State Standards Initiative, 2012) admit to this limitation:

The Standards set grade-specific standards but do not define the intervention methods or materials necessary to support students who are well below or well above grade-level expectations. No set of grade-specific standards can fully reflect the great variety in abilities, needs, learning rates, and achievement levels of students in any given classroom. (“What Is Not Covered in the Standards,” para.4)

The aim of differentiation for advanced and gifted learners is to achieve both equity and excellence by challenging all learners appropriately (Gallagher, 2000). In the past, school systems have largely failed in the goal of creating equitable access to gifted program services based on race, ethnicity, language, and socio-economic levels. Because of limitations in identification practices, these subpopulations are not represented within identified gifted populations at the same rate that they are represented in the general population (Ford, Harris, Tyson, & Trotman, 2002). Yet, gifted program offerings have proven effective for these subpopulations of gifted learners when they are given access. In a study conducted with parents, teachers, and middle school students representing five sub-categories of gifted learners (low income White students, low income African American students, low income other minority students, twice exceptional students, high non-verbal - low verbal students), VanTassel-Baska, Feng, Swanson, Quek, and Chandler (2009) found that “all groups interviewed appeared to think that the gifted program had been good for the students in the
study, providing challenge at the cognitive level and self-confidence at the affective level” (p. 723). Thus, challenging curriculum should be available to all students based solely on the readiness of the individual student.

Yet challenge for one student would not constitute challenge for another. In the book *How People Learn* (Bransford, Brown, & Cocking, 2000), the key findings on learners and learning and on teachers and teaching that were backed by extensive research were as follows:

1. Teachers must draw out and work with the preexisting understandings that their students bring with them. (p. 19)
2. Teachers must teach some subject matter in depth, providing many examples in which the same concept is at work and providing a firm foundation of factual knowledge. (p. 20)
3. The teaching of metacognitive skills should be integrated into the curriculum in a variety of subject areas. (p. 21)

The complexity of these findings lies in the reality that there is great variance in the preexisting understandings, factual knowledge, and degree of metacognition of students within any given classroom.

The aim of equity and excellence in challenging all learners should more likely be achievable under Common Core Standards at the elementary and middle school levels because of the Standards’ inherent complexity and depth. The Common Core Standards provide literacy standards that are applied across language arts, social science, and natural science content areas, making curriculum integration more feasible. An examination of a 10-
year span of the literature on curriculum integration concluded that integration of curricular areas is highly effective with adolescent learners (O’Steen, Cuper, Spires, Beal, & Pope, 2002). Building on what works with all adolescents, curriculum integration that centers on more abstract connections is a commonly-used strategy for differentiation with gifted learners, because gifted learners are more abstract thinkers and make connections more easily than age peers (VanTassel-Baska & Little, 2003). The National Association for Gifted Children (NAGC) addressed this strategy in outlining how the Common Core Standards should be aligned with NAGC’s Pre-K to Grade 12 Gifted Education Programming Standards by suggesting that teachers “create interdisciplinary product demands to elevate the learning for the gifted and to efficiently address multiple standards at once” (Johnsen, 2012, p. 229). The appropriateness of a high degree of integration with gifted learners has been well-documented.

An integrated-thematic curriculum is especially appropriate for gifted learners because of their exceptional abilities to see and understand relationships. Shaping course work around integrated themes inspires students to find personal meaning in their study by allowing them to generate their own observations, inquiries, and investigations, paralleling the processes performed by specialists in the field. Gifted learners have different learning needs than more typical learners and a curriculum appropriate for them provides: advanced content that allows for flexible pacing, learning processes designed to promote creativity, higher-level thinking and problem solving; and learning environments which are open and supportive of diverse learning styles and needs. (Tucker & Hafenstein, 1997, p.196)
However, O’Steen, Cuper, Spires, Beal, and Pope (2002) reported that one of the greatest constraints to employing integrated curricula rests in subject-based assessments. Although assessments based on the Common Core Standards are being developed, the understanding is that they will reflect a greater degree of connectedness across disciplines. Therefore, teachers will be encouraged to utilize more interdisciplinary approaches in the classroom if assessments are aligned with those approaches.

The study of differentiated instruction at the secondary level poses unique problems resulting from two organizational characteristics of regular secondary education programs: 1) the departmental organization of academic programs around content area instruction and 2) the open enrollment of advanced courses for all students. Both of these organizational structures provide positive benefits; however, they limit the opportunity for research on what curricula and instructional approaches are effective with academically gifted secondary learners. As a result, in gifted education, the elementary grades have been the focus of most research, curriculum development, and program services. Differentiated curricula for elementary gifted learners usually center on interdisciplinary concepts, higher level skills, and problem solving across content domains (Hertberg-Davis & Callahan, 2008; Maker, 1982a; VanTassel-Baska, 2012). Yet at the secondary level, Advanced Placement, Honors, and International Baccalaureate courses have constituted most secondary gifted program services, with little attention to how or if these courses have met the differing needs of academically gifted students (Gallagher, 2001). “The development of services and curriculum for gifted students of high school age has been relatively neglected, and not
surprisingly, little research has been conducted on the effectiveness of the few options that do exist” (Hertberg-Davis & Callahan, 2008, p. 199).

The Governor's School (GS) of North Carolina is the nation's oldest residential statewide summer program for academically gifted high school students. The fiftieth year of the Governor's School of North Carolina, 2012, provided a unique opportunity to examine a curriculum designed specifically for secondary gifted learners and implemented with over 32,000 secondary students. Especially in challenging economic times, it is imperative that educators focus limited fiscal and human resources on studying and utilizing what has proven to be effective.

This study examined the curriculum and instructional approaches developed and implemented by the Governor’s School of North Carolina for fifty years in English, mathematics, natural sciences, and social science for secondary gifted learners in order to determine how those approaches have addressed the needs of these learners. In the 1965 Board of Governor’s report on the Governor’s School’s first three years, the principal of the program, Douglas Carter, described the need for differential education for the gifted in the United States just eight years after the Russians launched Sputnik. The report noted that “the distinctive experiences which should constitute a differential education for the gifted are still in the realm of hypothesis” (Carter, 1965, p. 4). One of the basic aims of the program was stated as being “to explore and determine more precisely what those experiences should be and to serve as a pilot program” (p. 4). Through content analysis of the curriculum, interviews with present and former students, interviews with key administrators and leaders, and observations in the 2012 classrooms, this research documented what can be gleaned
about the education of secondary academically gifted learners from the fifty years of implementing such a curriculum.

**Background of the Study**

The Governor’s School of North Carolina opened its door to the first group of students in the summer of 1963. Background information into the political and educational climate of the times, both the state and national levels, is necessary to understand the significance and uniqueness of the program. In addition, understanding what was known about gifted education and differentiated curriculum for academically gifted learners puts the program in context.

**Historical context.** The Russians launched the world’s first Earth-orbiting artificial satellite, Sputnik I, in October, 1957, an event that profoundly affected the United States’ confidence in its education system. In a 1962 article entitled “Current Trends in Educating the Gifted,” Evelyn Carlson (1962) described the effects of Sputnik on gifted education:

> Emphasis on provision for the gifted has been growing throughout the past decade and at an accelerated pace since Sputnik. This can be seen in the increased number of magazine articles and books, in the development of special high school courses of study, in university in-service education courses, in state and national committees, in a whole series of National Education Association booklets on the academically talented, in increasing ability grouping, and in new and/or modified plans of school organization.

(p. 100)

Before Sputnik, few efforts had been successful in capturing the nation’s attention on the needs of gifted learners. An early contributor to the research was Lewis Terman who
Americanized the Binet-Simon Intelligence Test by developing the Stanford-Binet Intelligence Scales in 1916. Terman studied over 1500 students, including students who scored 140 or above on the Stanford-Binet Intelligence Scales, to determine their relative physical, emotional, social, and intellectual traits (Becker, 2003). Leta Hollingworth did groundbreaking work on both advocacy and curriculum development for gifted learners while at Columbia University in the 1920’s and 1930’s (Davis & Rimm, 1985). By the 1960’s, concepts of differentiated curriculum and services for the gifted were beginning to crystalize. Carlson (1962) reported an emphasis on acceleration, the counseling needs of this population, early identification in the primary school years, an increase in the course loads offered and expected of gifted secondary students, development of creativity, and curriculum review that would align with big ideas and thinking skills. Carlson saw interdisciplinary sequences as inevitable.

The point I would like to make here is that this trend toward sequential development of the big ideas in a subject is especially important in relation to educating the gifted. Not only does this utilize the higher level mental processes, but it also has, built into it, the basis for advancement at the individual’s own rate of learning. (Carlson, 1962, p. 102)

It is also valuable to note what was understood about the characteristics of academically gifted learners at the time the Governor’s School of North Carolina was conceptualized. In a 1962 article entitled ”Some Attributes, Aptitudes, and Interests of the Gifted,” Krause (1962) described gifted learners’ early language development, curiosity, advanced reading, abstract reasoning, and interest in philosophy. Krause also alluded to gifted learners’ concerns about world issues by stating that “the child of very high intelligence is not too much concerned
from a personal point of view. He is, rather, interested in the abstract matters of life and
death” (p. 139). He even went so far as to examine university offerings for advanced
students in 180 southeastern U.S. colleges, and noted the 25% increase in the advanced
courses in English from 1953 to 1960, and a similar increase of 23% and 21% for advanced
course offerings in natural science and mathematics respectively. Krause concluded that
“institutions of higher learning have definitely awakened to their responsibility to foster, and
further the education of the gifted student” (Krause, 1962, p. 140).

Dr. James J. Gallagher (1965), who later directed a curriculum review for the Governor’s
School (1992, January), gave a speech in 1965 to the National Association for Gifted
Children’s Annual Convention in St. Louis, Missouri. In that speech, Gallagher described
the forces influencing both education and society in 1965. These forces included the
“knowledge explosion” (p. 69), the increasing industrialization and automation of society,
and the reconceptualization of intelligence as including creative abilities, productive
thinking, and problem-solving, and as being more malleable and developmental than
previously thought. In response to these forces, Gallagher suggested that gifted programs
address the unique needs of advanced learners, who are distinguished by the “ability to
interrelate concepts, the ability to evaluate facts and arguments critically, the ability to create
new ideas and originate new lines of thought, to reason through complex problems” (p. 71).
However, Gallagher emphasized the difficulty of burdening classroom teachers with this
complex task, and suggested that scholars and experts in specific disciplines could provide
better expertise for gifted learners in the content areas. The vision portrayed by Gallagher of
an appropriate curriculum for gifted learners focused on an examination of the most
fundamental and basic ideas of a discipline as determined by the best available scholars. He cited the work of Jerome Bruner (1960) and his Structure of the Discipline model.

North Carolina had established the “Program for the Exceptionally Talented” by legislative act in 1961, providing financial support and supervisory assistance for local school systems “to encourage the initiation and development of recognized types of program adaptations benefiting the academically able student (Carter, 1965). At the national level, professional organizations that focused on the needs of gifted learners were already playing a key role. While the National Association for Gifted Children was well-established in 1963, it was not the only, or the first, professional organization concerned with gifted education. The first professional advocacy organization in gifted education, the American Association for Gifted Children, was founded in New York City in 1946 by Dr. Ruth Strang and Ruth Williamson. This association produced a collection of instructional ideas and strategies for meeting the needs of gifted learners that was presented to state directors of special education programs but with limited adoption. The establishment of the American Association for Gifted Children (now housed at Duke University) in 1946 was followed by the founding of the National Organization of Gifted Children (now known as the National Association for Gifted Children, NAGC) in 1954, and then the division of the Council for Exceptional Children known as The Gifted and Talented (CEC/TAG) (Spielhagen & Brown, 2008). The Council for Exceptional Children’s early start in 1922 through efforts of students and faculty at Columbia University, where Leta Hollingworth was later on faculty, provided fertile ground for the early inclusion of gifted education in special education. However, this
inclusion was not consistent. Into this political and educational environment, the first Governor’s School was created in North Carolina.

**Founding of the Governor’s School of North Carolina.** The Governor's School of North Carolina was created in 1963 as a summer institute for academically and artistically gifted students entering their junior or senior years of high school. The program was funded by both the Carnegie Corporation and private donations from Winston-Salem businesses for its first three years, then by the North Carolina General Assembly in 1966. It was the first Governor’s School for the gifted in the nation. North Carolina Governor Terry Sanford initiated the concept, with the help of his advisor, author John Ehle, and both were also responsible for envisioning the North Carolina School of the Arts (Lewis, 1968; Winkler, Stephenson, & Jolly, 2012). Demonstrating an awareness of the greater political climate of the times, the 1965 Governor’s School of North Carolina Staff Report (Carter, 1965) reflected the effects of Sputnik on the urgency to better educate advanced learners:

One important justification of a differential education for the gifted was brought vividly to light by the first Russian “sputnik.” This spectacular achievement challenged complacency and focused attention upon part of the rationale which underlies the creation of the Governor’s School: the need for highly trained creative leaders in the nation and its states. Sputnik I was a sharp reminder that civilization moves today at a dizzy pace, and that the nation which does not keep abreast of complex scientific, technological, economic, political, and cultural developments will find itself quickly outstripped. (pp. 5-6)
According to an article published in Gifted Child Quarterly in 1965 (Purkey, 1965), “underlying the curriculum of the Governor’s School is a body of principles formulated by Dr. [Virgil] S. Ward…, Governor’s School curriculum consultant, which delineates a differential program of education for the intellectually superior student” (p. 133). In Dr. Ward’s (1961) book, published two years before the Governor’s School was founded, he outlined those principles:

General Principles of the Educational Design (p. 78)
(I) That the educational program for intellectually superior individuals should be derived from a balanced consideration of facts, opinions based on experience, and deductions from educational philosophy as these relate to the capacities of the individuals and to the probable social roles which they will fill. (p. 81)
(II) That a program of education for the intellectually superior should be relatively unique.
(III) That the curriculum should consist of economically chosen experiences designed to promote the civic, social, and personal adequacy of the intellectually superior individual. (p.102)
(IV) That teachers of intellectually superior children and youth should be among those of the greatest general excellence to be found in the profession. (p. 109)

Principles of Intellectual and Academic Development (p. 121)
(V) That in the education of the gifted individual there should be considerable emphasis upon intellectual activity. (p. 126)
(VI) That the educative experience of the intellectually superior should be consciously
designed as generative of further development, extensively and intensively, along similar
and related avenues. (p. 141)

(VII) That the education of the gifted child and youth should emphasize enduring
methods and sources of learning, as opposed to a terminal emphasis upon present states
of knowledge. (p. 156)

(VIII) That the instruction of intellectually superior individuals should emphasize the
central function of meaning in the acquisition of fact and principle, and the varieties of
reflections of meaning in the developed communicative devices of man. (p. 161)

(IX) That the instruction of the intellectually superior should include content pertaining
to the foundations of civilization. (p. 170)

Principles of Personal, Social, and Character Development (p. 181)

(X) That scientific methods should be applied in the conception and in the execution of
the education for personal, social, and character adjustments of the intellectually superior
individual. (p. 195)

(XI) That instruction in the theoretical bases of ideal moral behavior and of personal and
social adjustments should be an integral part of the education of intellectually gifted
individuals. (p. 201)

(XII) That the concomitant factors under control of the school should be positively
controlled so that they contribute to sound personal, social, and character development.

(p. 212)

In an article published in 1962, Dr. Ward (1962) stated that a curriculum for the academically
gifted should “be as unique itself as are the degrees of mentality required for its successful
management” (p. 18). Ward cited extensively the previously-described research of Lewis Terman and Leta Hollingworth in the explanations given for each of the principles and in the reasons offered for their appropriateness with advanced learners. These principles best reflect what was known at the founding of the Governor’s School of North Carolina about appropriate curriculum and instructional approaches for academically gifted learners. They formed the curricular foundation for the development of the structure of the Governor’s School of North Carolina.

**Structure of the Governor’s School of North Carolina.** The Governor’s School is now administered by the Public Schools of North Carolina, the North Carolina Department of Public Instruction, and the North Carolina State Board of Education. A Board of Governors is appointed by the State Board of Education to serve in an advisory capacity. Initially housed on one college campus, the program now includes two campuses and approximately 800 rising juniors and seniors each summer. The North Carolina General Assembly has provided the funding of the Governor’s School since 1966. When funding was not approved by the North Carolina General Assembly in 2011 for the operation of the program’s fiftieth year, the summer of 2012, alumni from the program, through the Governor’s School Foundation, raised over $700,000 for the needed support (Stancill, 2012, February 20). In 2012, funding was reinstated for the 2013 session of the program.

**Governor’s School curriculum.** The Governor's School curriculum is divided into three areas, or types of classes, with each student taking all three areas. (Other elective and interest-based classes are offered, but those are not the focus of this study.) Area I content-specific classes are comprised of only students identified for that content area. The content
areas addressed are mathematics, English, French, Spanish, natural sciences, social science, art, choral and instrumental music, drama, dance and theatre. On the website that the North Carolina Department of Public Instruction (n.d.) maintains for the Governor’s School, Area I classes are described in the following way:

Area I classes in the academics and the arts emphasize contemporary texts, compositions, artistic expressions, issues, ideas and the theories that flow from them. Study in each Area I discipline emphasizes theory over the memorization of fact, particularly contemporary theories that stimulate innovative thought in a rapidly changing culture. Courses are designed to stimulate student creativity, move students to explore basic assumptions, explore unanswered questions, and develop an acceptance of the process of change. (Curriculum section, para.2)

As an example, in the 2012 Governor’s School, students in an English class discussed a graphic narrative, and in a math class, students examined various properties of infinity as understood by contemporary mathematicians.

Area II and Area III classes include students from multiple content areas. In Area II classes, students examine connections among the disciplines through an abstract concept. The description of Area II classes on the North Carolina Department of Public Instruction (n.d.) website is as follows: “Here students and teachers explore connections between and among these disciplines. As integrative concepts emerge, the class attempts to construct an understanding of contemporary ways of thinking and of the culture that arises from them” (Curriculum section, para.3). An example would be a discussion of beauty as a cultural concept in which students from every discipline bring an example of beauty from the
discipline to the discussion. Mathematics students might bring a formula, while music students bring a sonnet. Discussion centers on how we as a culture define beauty. In Area III classes, students make connections among concepts they have learned in Area I and II classes and their own lives, as well as the social world around them. They have an opportunity to put theory to practice. The North Carolina Department of Public Instruction (n.d.) website describes Area III classes as the place where students “ground what they are learning in their Area I and II classes in their own personal experience. Finally, they apply that understanding to their social worlds; that is, they try to discover links between ideas and actions, theory and practice” (Curriculum section, para.4). According to Jim Hart (personal communication, February 21, 2012), president of the Governor's School Alumni Association, Area III classes were not initially a part of the curriculum but were added "because students were having trouble relating what they were learning to their own lives."

The combined focus of these three types of classes echo the work of John Bransford (2007) in addressing the need for developing “adaptive expertise” in students. In order to address the rapid rate of change in our world, students can no longer be prepared, as Bobbitt (1918) once proposed in The Curriculum, for a singular career by studying the skills of a specific job. Instead, Bransford proposes that students “need to experience processes of inquiry and innovation-including the struggles and doubts” (p.2). The purpose of the Area III class reflects Bransford’s proposition that cognitive learning be paired with affecting learning to help students become more adaptive and innovative. “Helping students learn to see how their thoughts, emotions and behaviors are influenced by particular kinds of organizational and cultural settings seems to be extremely important” (p. 2).
Although the Governor’s School curriculum was first put in place 50 years ago, it resonates of what educators are proposing for the future. In his book *Five Minds for the Future*, Howard Gardner (2008) addresses the need to develop in every child five types of minds that will contribute to society and adapt to change. The first, the disciplined mind, entails becoming a specialist in at least one discipline. Area I classes are designed to address the current thinking, research, and strategies in the content area in which the students have shown outstanding ability. The second mind, the synthesizing mind, pulls together information and understanding from multiple sources and disciplines to create new wholes - such as narratives, taxonomies or systems, complex concepts, powerful metaphors or themes, non-verbal representations, and theories. The creating mind is the third, and emerges from the interaction of three entities: the individual, the cultural domain or medium, and the social field (that is, the institutions and individuals that specialize in that field). The interdisciplinary Area II classes that examine abstract concepts and themes, as well as the Area III classes that require a creativity project from each student, focus on developing the synthesizing and creating minds. Gardner's description of the fourth, the respectful mind, requires that students learn about groups other than their own, and study how groups have interrelated in positive ways in history. Lastly, building upon respect, there is the ethical mind. The ethical mind is ready and willing to respond to the expertise developed within a discipline, the synthesizing of what has been learned, the creative ideas and solutions for problems, the respect evolving from a realization that we all share this planet and should have access to the same rights. Area III classes, interdisciplinary in nature, focus on allowing these academically gifted secondary students to understand who they are and what
their place is in the world, enhancing both the respectful mind and the ethical mind. The Governor’s School curriculum, both explicit and implicit (Eisner, 1979), is designed to develop each of these minds.

**Student selection process.** Students are chosen for the Governor’s School program from among candidates representing all school districts in North Carolina. Selection for Governor’s School participants begins at the school level. Each student is nominated in one content area (English, math, social science, natural science, French, Spanish, dance, choral music, instrumental music, theatre, or visual art). All participants must qualify as academically gifted with scores of 92nd percentile or above on both standardized achievement and aptitude assessments. In addition, all students submit essays, descriptions of their experiences, and letters of recommendation, and students applying in the arts participate in auditions or portfolio reviews. Nominations of students selected by their schools are sent to the school district level (except for charter, non-public or special schools, which submit their nominees directly to the state), and the selected district-level candidates' names are forwarded to the North Carolina Department of Public Instruction for final statewide selection. In addition, in order to ensure representation from all school districts, each superintendent may nominate one student in the core academic areas (English, natural sciences, mathematics, and social science), and those nominees are invited to attend without further selection at the state level (North Carolina Department of Public Instruction, n.d.).

**Purpose of the Study**

The purpose of this qualitative case study was to gain a comprehensive understanding of the major curriculum and instructional approaches employed with academically gifted
secondary learners by the Governor's School of North Carolina. The focus was on the historical evolution, the structure, and the benefits of the Governor's School's written curriculum and academic instructional program. In order to establish clear parameters for the study, only these four content areas were examined: English, mathematics, social science, and natural sciences. The qualitative case study involved analyzing documents such as program descriptions and curricula, and interviewing past participants, administrators, instructors, and key curriculum developers. In addition, through a pilot study, I conducted classroom observations and student interviews during the 2012 summer program, archiving the data for further analysis along with all other data. The theoretical framework for this study was the Integrated Curriculum Model (ICM) developed through the College of William and Mary's Center for Gifted Education (VanTassel-Baska & Wood, 2010).

This qualitative case study addressed the following primary research question:

How do the curriculum and instructional approaches of the Governor’s School of North Carolina address the needs of secondary academically gifted learners?

Secondary questions explored include the following:

1) How do the curriculum and instructional approaches of the Governor's School of North Carolina reflect best practices for the teaching of academically gifted learners?

2) What have been the benefits to participants of the curriculum and instructional approaches developed and implemented by the Governor's School of North Carolina?

3) How have the curriculum and instructional approaches for the Governor's School of North Carolina changed over time?
Significance of the Study

Because of concerns about equity and access, gifted education remains a misunderstood and contentious issue among educators and policy makers (Gallagher, 2000). Spielhagen and Brown (2008) went so far as to say that “nothing seems to polarize group value systems in education more than discussion of the needs of gifted students” (p. 374). However, non-educators are far less ambivalent about the nation's need to develop its intellectual potential. As part of the report "Preparing the Next Generation of STEM Innovators," the National Science Foundation (2010, May 5) outlined their plan of action for addressing the need to develop academic talent. This plan included holding "schools, and perhaps districts and states, accountable for the performance of the very top students at each grade" (p. 4), as well as creating forums to discuss "teacher preparation and pedagogical best practices aimed at fostering innovative thinking in children and in young adults" (p. 4). The National Science Foundation Board has made clear its goal: "Serving the needs of all students, including high-ability students, will help achieve our Country's aspiration for true equality of educational opportunity and will facilitate the development of the innovators of tomorrow who can lead the way forward" (p. 7). In its report, Rising Above the Gathering Storm Revisited, the committee from the National Research Council (2010) insisted that for our country to survive economically, it would have to “have a cadre of highly creative individuals who possess an extraordinary capacity for mathematics, science and engineering” (p. 47). Even the agricultural economic analysts are concerned about losing “human capital” in the form of bright, college-bound students, particularly in rural areas (Artz, 2003; Howley, Rhodes, & Beall, 2009).
My interest in conducting this research came about not only from my 30 years of experience in gifted education, but also from observing the alumni of the Governor’s School of North Carolina rally to save the program. When the North Carolina General Assembly cut the funding for the program entirely from their budget for the 2012 fiscal year, Governor’s School alumni from five decades through the Governor’s School Foundation worked tirelessly to raise over $700,000 in less than five months (Stancill, 2012, February 20). I surmised that, if the experience of Governor’s School had such a profound impact on them that they would be willing to sacrifice during trying economic times to see other generations have the same benefit, there must be value to the program, and to the curriculum itself. Furthermore, no research has been conducted on the Governor's School of North Carolina’s overall curricular approach since a curriculum review in 25 years. In 1992, Dr. James Gallagher authored a Governor’s School Review Report that reinforced the Governor’s School’s mission in view of the 25 years of its existence at that point. In addition, two studies (Milner, Coker, Buchanan, Newsome, Milner, Allen, & Williams, 2009; Milner, Ferran, & Martin, 2003) exist that have a more narrow focus. The first study found that the Governor's School attendees outperformed non-attendees in intellectual growth and personal maturity (Milner, Coker, Buchanan, Newsome, Milner, Allen, & Williams, 2009). The second study revealed an increase in the logical reasoning skills of Governor’s School participants and broadened horizons in their plans for the future, although students’ moral reasoning skills remained unchanged (Milner, Ferran, & Martin, 2003).

Research studies examining the effects of other summer opportunities for gifted learners have focused on surveys of students and parents (McHugh, 2006; VanTassel-Baska, Landau,
& Olszewsk, 1984) and have mostly documented the social and emotional benefits of such programs (Adams-Byers, Whitseel, & Moon, 2004; McHugh, 2006; Rinn, 2006; Ybarra, 2005). A few studies have focused on the academic benefits of summer programs for the gifted, noting increases in AP math/science enrollment (Li, Alfeld, Kennedy, & Putallaz, 2009), higher ACT scores (Schiel, 1998), or other predictors of success (Young, Worrell, & Gabelko, 2011).

Rather than examining the individual growth resulting from attending the Governor’s School, this study focused on the curriculum and instructional approaches, and the elements that are perceived as beneficial by the instructors, present participants, and alumni. Therefore, the significance of this study reaches beyond the singular entity of the Governor's School of North Carolina and even its counterparts across the country by examining the long-term effects of a differentiated curriculum. Gifted education expert Sally Reis (n.d.) laments, "We seldom ask how gifted program participants benefit from their experiences, and we rarely ask what else we should have been doing for gifted students who had some program involvement." One of the few longitudinal studies of secondary programs for gifted learners in a regular education program involved 88 former students over a 12-year period after they completed high school, and determined that 85% of the adults who had participated in advanced classes perceived them as positive experiences (Perrone, Wright, Ksiazak, Crane, & Vannatter, 2010). Even these researchers concluded that “the field is still lacking sufficient empirical research on adults’ perceptions and experiences regarding advanced classes or gifted programs” (p. 128).
Gifted learners demonstrate a broader and deeper capacity for engaging learning than do their age peers (Csikszentmihalyi, Rathunde, & Whalen, 1993). Therefore, providing challenge that extends beyond their mastery requires a differentiated curriculum. In describing the need to differentiate, Stanford University Education Professor Linda Darling-Hammond (2006) states that, “not only is the kind of practice needed to teach students with a wide range of learning needs an extremely complex, knowledge-intense undertaking – requiring extraordinary personal and professional skills – but also U.S. schools rarely support this kind of practice” (p. 302). Curriculum theorist Elliot Eisner (2009) echoed this need to acknowledge differences among students:

> Really good schools increase the variance and raise the mean. The reason I say that is because, when youngsters can play to their strengths, those whose aptitudes are in, say, mathematics are going to go faster and further in that area than youngsters whose aptitudes are in some other field. (pp. 333-334)

This examination of how the curricular approaches of the Governor’s School of North Carolina have addressed the need for this level of challenge over its fifty years will contribute to greater understanding of differentiation for secondary gifted learners. As McHugh (2006) stated, “Reviewing and conducting research on summer residential program models for gifted and talented students will illuminate the academic, social, and emotional difficulties they face and reveal which practices are effective in addressing these issues (p. 50).
**Definition of Terms**

*Academically or Intellectually Gifted (AIG):* Using the North Carolina definition articulated in Article 9B (N. C. G. S. §115C-150.5), "The General Assembly believes the public schools should challenge all students to aim for academic excellence and that academically or intellectually gifted students perform or show the potential to perform at substantially high levels of accomplishment when compared with others of their age, experience, or environment. Academically or intellectually gifted students exhibit high performance capability in intellectual areas, specific academic fields, or in both intellectual areas and specific academic fields" (North Carolina General Statutes, 1996). For the purposes of the Governor's School of North Carolina, this includes both aptitude and achievement test scores of a minimum of 92\(^{nd}\) percentile. Governor's School students identified in English, mathematics, social science, natural sciences, or foreign languages must be rising seniors in high school.

*Area I Classes:* Area I classes at the Governor’s School of North Carolina are the content area classes offered to each student in the area in which the student was nominated for the program. Area I classes include offerings in English, mathematics, natural sciences, and social sciences, the areas examined in this study, as well as Spanish, French, art, choral and instrumental music, drama, dance and theatre.

*Area II Classes:* Students from all of the Area I content areas participate together in the interdisciplinary Area II classes. These classes provide “a course in critical, creative, philosophical thinking and questioning, in which brief readings and other texts from writers and thinkers past and present are offered only to spur the students' curiosity and the
development of their own voices and ideas” (North Carolina Department of Public Instruction’s (n.d.) website, Area II, para. 1).

**Area III Classes:** Area III classes are designed “to elicit open-mindedness and tolerance, as well as personal reflection and re-evaluation of value systems” (North Carolina Department of Public Instruction’s (n.d.) website, Area II, para. 1). They are interdisciplinary in nature and involve students representing each of the content areas.

**Artistically Gifted:** For the purposes of the Governor's School of North Carolina, artistically gifted students are those identified in an area of the arts (art, choral and instrumental music, drama, dance and theatre) who are also identified as Academically or Intellectually Gifted (AIG). Students who are rising juniors or seniors and are nominated in an area of the arts must submit a portfolio or participate in an audition in their area of nomination. They are chosen based on both academic and artistic criteria.

**Curriculum:** For the purpose of this study, the term curriculum will refer to the written description of what is taught at the Governor’s School or how it is to be taught. The curriculum will include the documents The Governor’s School of North Carolina: Staff Report (Carter, 1965), Opening Windows onto the Future: Theory of the Governor’s School of North Carolina (Lewis, 1968), and The North Carolina Governor’s School Program Document (2005). These constitute what Elliot Eisner (1979) would refer to as the “explicit curriculum” of the Governor’s School.

**Differentiated Curriculum:** “A process teachers use to enhance student learning by matching various curriculum components to characteristics shared by subgroups of learners
(e.g., cognitive ability, prior knowledge learning style preferences, interests, habits of mind, or learning rate)” (Purcell & Eckert, 2006, p. 88).

**Instruction** – For the purpose of this study, instruction will refer to the strategies used in presenting the written curriculum. These strategies might entail the types of questioning employed, the arrangement of the room, materials used, the way that instructors respond to students, or any other types of pedagogy associated with the delivery of the written, or explicit, curriculum. Instruction will also entail what Elliot Eisner (1979) termed the “implicit curriculum,” which would include the organizational structure, rules, and underlying values of the Governor’s School’s instructional program. Eisner states that “the implicit curriculum of the school is what it teaches because of the kind of place it is” (p. 82). As VanTassel-Baska (1989) stated, “effective differentiation takes into account both the written and the delivered curriculum” (p. 13).
CHAPTER 2

Literature Review

To understand if a curriculum designed to meet the needs of gifted learners is appropriate and beneficial, it is necessary first to understand the needs of gifted learners that distinguish them from other students of their “age, experience, and environment” (North Carolina General Statutes, 1996, para.1); the principles of differentiation that address those unique needs and how those principles are employed at the secondary level; the theoretical models that have been developed to employ those principles and how they are implemented in secondary curricula; and the effectiveness and benefits of other Governor’s Schools and summer opportunities for gifted learners. This literature review examines research related to these key issues. The literature documents the physiological, intellectual, psychological, and emotional characteristics that distinguish academically gifted learners from other students of their age, experience, or environment, and the link between those characteristics and curricular approaches that address those differences. The theoretical framework of the Integrated Curriculum Model (VanTassel-Baska & Wood, 2010) has been implemented and researched in multiple settings since 1986 and has provided a lens through which curriculum intended to meet the needs of academically gifted students can be designed and examined. Research on summer and residential programs that employ a differentiated curriculum for secondary gifted learners have demonstrated their effectiveness in meeting academic, social, and emotional needs.

In addition, this literature review serves another key purpose. Robert Yin (2009) discussed the need to analyze data based on “theoretical propositions, rival explanations, or
descriptive frameworks” (p. 162) using one of five analytical techniques (pattern matching, time-series analysis, logic models, explanation building, and cross-case syntheses).

Naysayers examining the benefits of a summer program for secondary academically gifted learners might provide several rival explanations for those benefits. Those rival explanations are delineated in Table 2.1, along with the corresponding parts of the literature review that address them:

Table 2.1
Rival Explanations to Differentiation for Gifted Learners

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<th>RIVAL EXPLANATIONS:</th>
<th>LITERATURE REVIEW:</th>
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<td>The Needs of Gifted Learners</td>
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<td>academically gifted learners are no</td>
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<td>academically gifted is just good</td>
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<td>kind of instruction to all students.</td>
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<td>Summer programs for gifted learners</td>
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The Needs of Gifted Learners

Gifted education has long experienced controversy in the United States (Gallagher, 2000). Opposing sides both point to issues of equity. One side argues that all children are gifted and deserve a gifted education and, therefore, there should be no curricular differentiation. The other side views gifted education as creating equity by challenging all students at their differing levels (Gallagher & Gallagher, 1994; VanTassel-Baska, 1998). English education expert John Mayher (1990) describes two frequent objections to differentiation. One is the assumption that those who teach the gifted are somehow feeding the same “hierarchy of prestige” (p. 18) that values higher education teaching over secondary, and secondary over elementary. As Mayher clarifies, “all levels provide significant challenges and all are extremely difficult to do well” (p. 18). Mayher points out a second objection, the former practice of tracking, which did not allow students any flexibility to access higher level courses once their track was determined. However, Mayher argues that “having a school curriculum that builds a floor is okay as long as it’s not a ceiling” (p. 48). Differentiation simply acknowledges that a floor for one may not be a floor for another, as children learn at different rates and come with different levels of understanding. In examining the aims of education, education philosopher Nel Noddings (2009) stated the following:

Not only do we fail to educate children along lines congruent with their natural equipment, but we insist that natural differences are so minimal that all children can profit from the education once reserved for a few. Unlike Plato, we do not even ask whether that education is appropriate for anyone, much less for everyone. (p. 429)
**Developmental needs.** The Russian psychologist Lev Vygotsky (1978) defined the concept of an individual's zone of proximal development as “the distance between the actual developmental level as determined by independent problem solving and the level of potential development as determined through problem solving under adult guidance or in collaboration with more capable peers” (p. 86). Illustrating this concept with an example of two children of the same age, Vygotsky (1978) explained:

When it was first shown that the capability of children with equal levels of mental development to learn under a teacher’s guidance varied to a high degree, it became apparent that those children were not mentally the same age and that the subsequent course of their learning would obviously be different. (p. 86)

Given that each child in a classroom has a different zone of proximal development, gifted education is simply intended to address the needs of those whose zones range beyond the grade level and classroom norms (Tomlinson & Allan, 2000). In Tracey and Morrow’s (2012) text on reading theories, a third grade teacher described the relationship in this way:

Based on my experiences, Vygotsky’s zone of proximal development makes sense. In the classroom, children who are above a certain level do not waste their time relearning information that they already know. Similarly, children who require reinforcement in some areas have the advantage of receiving scaffolding from the teacher, of learning with other children at their level of development, and of having tasks broken down into smaller steps for them. (p. 130)

**Brain research on needs.** Brain research has reinforced what Vygotsky proposed by demonstrating physiologically that learning takes place in that "zone" between being under-
challenged and being over-challenged (Jensen, 1998). Brain researchers refer to these prime states of learning as "moderate challenge" and "relaxed alertness." According to Eric Jensen (1998), researchers at Washington University School of Medicine found that many areas of the brain "light up" on a PET scan when the brain is engaged in a new task, but show less and less engagement as the task is mastered. Furthermore, using EEG’s, psychologists at the Max Plank Institute in Berlin, Germany, found that superior cognitive performance is related to the overall efficiency of information processing not limited to a specific domain of expertise (Grabner, Neubauer, & Stern, 2006; Sousa, 2009). These differences have even been noted physiologically by significant differences in the development of the prefrontal cortex in gifted learners (Sousa, 2009). In a study that examined the relationship between structural brain development and aptitude, as measured on the Wechsler Scales of Intelligence (Wechsler, 1992) with 307 individuals between the ages of 3 and 29, the following results were reported (Kalbfleisch, 2008).

Specifically, the authors reported that children with superior levels of intelligence experience a markedly different pattern of brain development from children with average and high intelligence. Children with superior intelligence appear to have thinner prefrontal cortices than others their age, followed by a rapid increase in cortical thickness, which peaks around age 11 and then wanes later in adolescence. The prefrontal cortex facilitates processes associated with higher-level cognition such as working memory, inhibitory control, and reasoning. (p. 167)
Using no more than this physical evidence, the case for differentiated education for advanced learners can be made. The direct implication is that all students should be equally engaged by getting new challenges.

**Academic needs.** Characteristics associated with gifted learners are dependent on the definition of giftedness used. Therefore, descriptions of these characteristics vary greatly in the research. For example, Renzulli’s (2002) three-ring definition of giftedness involves the interaction of three traits: above average ability, task commitment, and creativity. On the other hand, the North Carolina definition of academically or intellectually gifted learners does not include creativity or task commitment, and describes ability not as “above average,” but as “potential to perform at substantially high levels of performance” (North Carolina General Statutes, 1996). Therefore, the characteristics, and thus the differentiation that addresses them, differ based on the definition of giftedness.

The literature on academically and intellectually gifted students provides a fairly consistent consensus on the characteristics of this specific gifted population as defined by North Carolina law (North Carolina General Statutes, 1996). As compared with age peers, academically or intellectually gifted students learn more rapidly; perceive more unusual relationships; see and create patterns; are more intellectually playful; sense discrepancies and hypocrisies; and have a stronger need to know, more abstract thinking, superior communication skills, more intense interests, and a greater ability to concentrate when engaged in a subject (Gallagher & Gallagher, 1994; Mulhern, 2003; VanTassel-Baska, 1998). Furthermore, two studies compared the results from the administration of the Myers-Briggs Type Indicator (MBTI) for academically gifted learners to those of norming samples of
students of the same age. Cross, Neumeister, and Cassady (2007) administered the MBTI to academically gifted students (N= 931) in a public residential academy and Hawkins (1997) administered the MBTI to students in the residential Mississippi School for Mathematics and Science (N=966). Of particular interest are the differences in scores related to sensing (S) types and intuitive (N) types. For the normative population (N=9,320), 68.1% of students were sensing (S) types and 31.9% were intuitive (N) types. However, for the Hawkins (1997) study, the reverse was true, with 65.6% of academically gifted students indicated as intuitive (N) types. Likewise, in the Cross, Neumeister, and Cassady (2007) study, 68.9% of academically gifted students were intuitive (N) types. As Cross, Neumeister, and Cassady noted, “the N personality type in the gifted students reflects a tendency to prefer tasks that involve imagination, insight, and inspiration. They also prefer courses on theory rather than courses that are heavily fact laden”(p. 286). These conclusions confirm that academically gifted learners are more likely to be abstract thinkers, while their age peers tend to be more concrete in their perceptions.

Motivational needs. One of the issues surrounding the needs of academically gifted learners that is most relevant to the Governor’s Schools and summer programs concerns motivation. In a regular instructional program where expectations are established for grade-level competencies, academically gifted learners have frequently mastered those competencies either more quickly than other students or even prior to instruction. In a study at the University of North Carolina at Chapel Hill (Gallagher, Harradine, & Coleman, 1997) in which researchers surveyed 871 students (173 elementary, 411 middle school, and 287 high school) in nine North Carolina school districts, the following results emerged.
Only mathematics and the special AG [Academically Gifted] classes were given high marks for challenge. Core subjects such as Social Studies, Language Arts, and Science were reported not challenging by half of these students. The strongest recurring themes were having to wait for other students to catch up, having to sit through additional visitations of long-ago mastered content, having teachers refuse to allow them to go ahead to further assignments or to other topics, and of getting into trouble because of the resulting time on their hands. (p.135)

These results reflected conclusions from an earlier report at the national level, “National Excellence: A Case for Developing America’s Talent” (Ross, 1993), which stated that "most regular classroom teachers make few, if any, provisions for talented students" (p.2). In the North Carolina study, academically gifted students reported seldom being challenged in the regular instructional program, and not often motivated by a performance goal orientation that focused on getting good grades because they could achieve those grades with little effort (Little, 2012). Yet, grades are the primary motivational approach within regular education programs. A more desirous approach to motivation is that of mastery goal orientation in which students are interested in the learning experience itself and gain satisfaction from accomplishing a goal (Little, 2012). Academically gifted students experience this orientation to motivation less frequently than their age peers functioning at grade-level and below.

A study which explored the relationship between intelligence and motivation examined longitudinal data on over 200 students and compared the motivational levels of those with 130 or above on the Wechsler Intelligence Scales for Children-Revised ((Wechsler, 1992) with their age peers (Gottfried, Cook, Gottfried, & Morris, 2005). The academic intrinsic
motivation levels of students were assessed using the Children’s Academic Intrinsic Motivation Inventory (Gottfried, 1986). According to their results, of the students with high levels of intrinsic motivation, 44% of the eight year olds with high levels of motivation were also intellectually gifted, and only 21% of those for whom a composite from ages 12, 15, and 17 were high in both traits. “These findings show that, whereas gifted motivation and gifted intelligence are not mutually exclusive, their degree of nonoverlap far exceeds their degree of overlap” (Gottfried, Cook, Gottfried, & Morris, 2005, p. 101). Although a causal relationship was not explored, the authors concluded that those with academic strengths are not the same overall population as the highly motivated learners.

The research indicates that lasting motivation requires a performance goal orientation, and that academically gifted students are not always motivated. Studies have also demonstrated that one of the greatest contributing factors to underachievement among the gifted is lack of motivation and goal valuation. One study compared achieving gifted (n=122) and underachieving gifted (n=56) from among 178 academically gifted students (IQ or achievement score at or above the 92nd percentile, the same base criteria as that for the Governor’s School) in grades 9-12 from 28 school districts across the nation (McCoach & Siegle, 2003). The five factors were academic self-perceptions, attitudes toward school, attitudes toward teachers, motivation, and goal valuation. The instrument used was the School Attitude Assessment Survey-R (McCoach, 2000), which contains 43 items and uses a 7-point Likert scale. While the mean differences between the gifted achievers and gifted underachievers were significantly different for four of the five factors (excluding academic self-perceptions), the most distinct differences were in the factors of motivation and goal
valuation. For motivation, achieving gifted students’ mean (M=5.48) was significantly higher than that of underachieving gifted students (M=3.90). Likewise, for goal valuation, achieving gifted students (M=6.53) scored higher than underachieving gifted students (M=5.26). Using a logistic regression with these two variables allowed the researchers to correctly classify 81.8% of the sample as either achievers or underachievers. Therefore, motivation and goal valuation play a prime role in predicting which of the academically gifted learners will not reach their full potential.

**Affective needs.** The relationship between motivation and goal valuation and the effects of this link on achievement point toward a larger issue concerning the relationship between the cognitive and affective needs of academically gifted learners. In the book *Off the Charts! Asynchrony and the Gifted Child*, authors Tolan and Piechowski (2012) described this relationship.

It is vital to maintain an awareness of giftedness as more than particular talents that can be developed to provide gifts and services for the larger culture. It is a unique way of seeing and processing the world that brings both benefits and challenges to the gifted individual, from birth and early childhood throughout the lifespan. (p. 8).

The negative effects of the affective needs specific to academically gifted learners have long been associated with stress, perfectionism, and depression (Webb, Meckstroth, & Tolan, 1994). A study involving high-achieving university honors students (N=499) found that the perfectionists in the study, when placed in a challenging academic environment that did not address affective needs, were likely to feel depressed, hopeless, and academically inferior (Rice, Leever, Christopher, & Porter, 2006). In a phenomenological study involving 27 gifted
elementary students in three different special programs for gifted students, the researchers concluded that the ways in which affective needs of the gifted learners were addressed affected the academic success of the students (Eddles-Hirsch, Vialle, Rogers, and McCormick, 2010).

Schools that purposefully worked toward meeting the affective needs of their students by introducing several different types of social and emotional support systems were arguably far more effective in creating a positive social context. Academically advanced students at these schools appeared also more likely to be able to demonstrate their academic ability without resorting to maladaptive types of social coping strategies. (p. 124)

In another study, 300 academically gifted high school students who had gone from a traditional school environment to a residential school for gifted learners were administered the Social Coping Questionnaire either two (Class of 2006) or three (Class of 2005) times during their two years at the residential school (Cross & Swiatek, 2009). Results showed that students became more humble concerning their intellectual abilities in the residential environment with other gifted peers. In addition, “the students [became] more comfortable in terms of social interactions, gaining a sense of acceptance never felt before in school” (p. 32).

Development theorist Charity James (1974) examined adolescents' needs to balance 'separateness' with 'belongingness.' The difficulty with achieving this for academically gifted learners is that their belongingness is often experienced only with students who share their characteristics and ways of thinking. In programs that do not encourage the interaction of
these students with each other, academically gifted students may envision themselves as separate from, and even superior to, their peers. However, when placed with other peers with the same academic abilities and provided with support, they have an opportunity to fulfill their need for belongingness.

In her discussion of “meaningfulness” in the curriculum, Little (2012) defined meaningfulness as “the degree to which an individual learner finds value in a task and is therefore motivated to engage in or accomplish it” (p. 700). Unlike the regular instructional program, summer programs are able to provide an opportunity for gifted learners to experience an appropriate level of challenge and, therefore, to experience performance goal orientation, because of the level of the instruction and the de-emphasis on grades. The section of the literature review on summer programs explores further how summer programs address academically gifted learners’ needs for challenging curricula.

**Curriculum Differentiation for Gifted Learner**

In her work on meaningfulness in the curriculum, Little (2012) saw the curriculum as a key component of motivation for academically gifted learners. As she explained, “the combination of appropriate challenge and meaningfulness in the curriculum transforms it into something that represents a learning opportunity for the student and therefore something worth being motivated to pursue in the first place” (p. 703). The principles of differentiating curriculum for gifted learners are built on the very characteristics that make these learners markedly different from their age peers (Gallagher & Gallagher, 1994; Maker, 1982a). As Burns, Purcell, and Hertberg (2006) described it, “curriculum differentiation…is a process teachers use to enhance student learning by matching various curriculum components to
characteristics shared by subgroups of learners (e.g. cognitive ability, prior knowledge, learning style preferences, interests, habits of mind, or learning rate)” (p. 88). Because these differences were originally thought to be only quantitative, or a matter of simply more (Friedman & Shore, 2000), initial understandings led to a focus only on acceleration. In other words, if gifted learners were the same as average learners two years older, then placing them in a curriculum two years beyond would meet all of their intellectual needs.

However, present understandings include qualitative differences, as well as quantitative, that lead toward a different kind of curriculum, not just acceleration. For example, because gifted learners are more abstract, complex, and sophisticated in their thinking, their content should be more complex, abstract, sophisticated and interdisciplinary (Gallagher & Gallagher, 1994; Maker, 1982a; Tomlinson, 1999). Based on their ability to reason and synthesize at a level beyond their age expectations, the thinking processes required within their learning should reflect those traits (Maker, 1982b; VanTassel-Baska, & Little, 2003). As evidence of this difference in thinking, a study comparing gifted ninth grade math students and professional mathematicians determined that the students used the same processes as adult mathematicians for constructing proof (Sriraman, 2004). Piaget’s equilibration theory has also been applied in research to the understanding of characteristics of gifted learners. In a longitudinal study comparing young children of average and higher aptitudes as measured on IQ tests, children with higher aptitudes were significantly more likely to seek patterns and show growth across domains (Cohen & Kim, 1999). As a result, the study recommended that differentiation for these high-functioning children focus on providing opportunities for disequilibrium, such as when a child is able to learn and
encounter concepts not already mastered, and develop questioning strategies that aid inquiry training.

Furthermore, in her synthesis of over 800 research studies and literature articles on curriculum differentiation from 1861 to 2007, Karen Rogers (2007) concluded that gifted learners need challenging, accelerated, fast-paced instruction, as well as the opportunity to work both independently and with other gifted learners. An examination of the research surrounding eleven currently-used models for curriculum differentiation also supported the use of advanced curricula in core academic areas, delivered at a faster pace and with learners who share similar needs (VanTassel-Baska & Brown, 2007). Overall, differentiation of the curriculum to meet the needs of gifted learners should address all four dimensions of curriculum - content, process, product, and the learning environment (Gallagher & Gallagher, 1994; Maker, 1982b; Tomlinson, 1999).

For some academically gifted, their needs exceed even those of other identified gifted learners. As researchers at the Center for Talented Youth and other talent search programs have determined, many students with uniquely high scores are too mathematically and/or verbally advanced for even excellent in-school programs to meet their intellectual and academic needs (Stanley, 2005). In his ethnography of a gifted residential program in which he lived among students over the course of an academic year, Laurence Coleman (2005) concluded that such an intense program was not only appropriate for highly advanced secondary students, but equally inappropriate for those with less potential for high levels of academic performance.
Not all research studies on differentiation have yielded positive results for all students served. In a study by the National Bureau of Economic Research comparing the achievement scores of middle school students who barely qualified for a gifted magnet program with scores of students who barely missed qualifying (N=8,000+), those who qualified and attended the program reported an increase in likelihood of taking more intensive courses, but no significant improvement on academic achievement over the group that barely missed qualifying (Sparks, 2011). The researchers suggested that the students who barely qualified, some performing initially in the 80th percentile, might not have been strong candidates for the program, and might have been under too much stress around high-performing classmates. These results also suggest that gifted programs are not the best instruction for all students, but instead are designed to meet the unique needs of academically gifted learners.

While this research study on the Governor’s School of North Carolina’s curriculum was not an evaluative study, it is helpful to consider the questions outlined by VanTassel-Baska and Stambaugh (2008) for the evaluation of curriculum and instruction for gifted learners. The following questions they recommended for use in designing an evaluation.

1. What are the patterns of growth in students in the areas that the gifted program focuses on?

2. What are the predominant instructional strategies used by teachers of the gifted to deliver a differentiated curriculum?

3. What evidence exists that the curriculum is appropriately tailored to the needs of gifted learners?

4. What is the relationship of the gifted curriculum to the standard one?
5. What are stakeholder perceptions about the efficacy of the curriculum?

6. What evidence exists that gifted learners are academically successful when they leave the school district and beyond?

7. What evidence exists that gifted learners are receiving appropriate affective counseling differentiated for their unique needs? (p. 360)

Although these questions are designed to be asked about a curriculum for the gifted within a regular instructional program rather than a summer program like the Governor’s School, they were helpful in determining the interview protocol with students, alumni, instructors, and key administrators, and for directing the classroom observations at the Governor’s School in 2012.

Gifted program services for secondary gifted learners in the United States have traditionally been limited to the offering of Advanced Placement (AP) and International Baccalaureate (IB) courses to all students, with the assumption that these services would particularly and completely meet the needs of advanced learners. Yet, little research has been done to verify this assumption. Hertberg-Davis and Callahan (2008) conducted a qualitative study in which they interviewed 200 teachers, 300 secondary students, 25 building-level administrators/coordinators, and 8 program coordinators in 23 U.S. high schools to examine perceptions of AP and IB courses and determine the appropriateness of these programs for high-end learners. Their findings indicate that students do feel challenged in these courses, but regretfully “nearly all of the students in our study indicated that AP and IB courses were the first courses in which they experienced genuine challenge, and the first academic environments in which they felt comfortable with their advanced abilities and academic
interests” (p. 199). Given that secondary students usually do not take these courses until their junior or senior years, and even then usually not for every class, most of their high school careers are spent not being challenged.

However, acceleration and advanced content can be offered in forms other than AP and IB courses. Eighteen ways of accelerating learning are outlined in *A Nation Deceived: How Schools Hold Back America’s Brightest Students* (Colangelo, Assouline & Gross, 2005). In this report, James Kulik (2005) presents two meta-analyses of achievement effects of 11 acceleration studies with same-age comparison groups and 15 acceleration studies with older control groups. When compared with same-age students with similar abilities who were not accelerated, the accelerated students outperformed the non-accelerated control group on achievement tests, with a median effect size of the studies being 0.80. In other words, the accelerated students performed an average of almost one standard deviation above the achievement of students of the same age. In comparing students who had been accelerated with their older grade-level peers who were not accelerated but had equal aptitude, the median effect size in the 14 studies was -0.04. Kulik concluded that “accelerated students did just as well as the bright students in the grades into which they moved” (p. 18). Not only does acceleration have positive measurable effects on achievement, but also students who have experienced acceleration report more positive feelings overall.

In another study conducted with 320 young adults in the top .01 % (Mean IQ > 180) who had been grade accelerated, only 5% regretted being accelerated (Lubinski, Webb, Morelock, & Benbow, 2001). By analyzing four empirical studies on the self-reported feelings and experiences of accelerated students, Lubinski (2004) concludes that “intellectually
precocious students who experience educational acceleration in middle school and high
school view their pre-college educational experiences much more positively than their
intellectual peers who were deprived of such experiences” (p. 34).

**Theoretical Framework: Integrated Curriculum Model**

Within the field of gifted education, multiple models exist for differentiated curriculum
development, implementation, and evaluation (Maker, 1982b). However, the Integrated
Curriculum Model (ICM) was selected as the theoretical framework for examining the North
Carolina Governor's School curriculum because of its history of use for over twenty-five
years, its own theoretical foundations that align with the unique characteristics of gifted
learners, and the empirical research that has determined its effectiveness (VanTassel-Baska
& Wood, 2010). It was also selected because of its fit with the Governor’s School’s
originally stated aims: “to acquaint these future leaders with the latest theories and
techniques in their chosen fields, introduce them to some of the present thorny problems in
the field,” and “inspire them to creative activity on their own” (Lewis, 1968, p. 2).

First proposed in 1986 by Joyce VanTassel-Baska of the Center for Gifted Education at
the College of William and Mary, the Integrated Curriculum Model has three major
dimensions: 1) “emphasizing advanced content knowledge that frames disciplines of study”
(VanTassel-Baska & Little, 2003, p. 7); 2) “providing higher order thinking and processing”
(p. 8); and 3) “focusing learning experiences around major issues, themes, and ideas that
define both real-world applications and theoretical modeling within and across areas of
study” (p. 8). These dimensions are built on the large body of research and literature in
gifted education, and reflect Vygotsky's (1978) three overarching principles: challenge for
each student beyond the individual's zone of proximal development or existing mastery, the need for students to interact with others, and constructivism which requires that students construct their understandings from information given rather than taught didactically. Furthermore, as VanTassel-Baska and Wood (2010) concluded, “The ICM model synthesizes the three best approaches to curriculum development and implementation documented in the literature for talented learners” (p. 346). These approaches are also reflected in the National Association for Gifted Children’s 2010 Pre-K-Grade 12 Gifted Programming Standards. The evidence-based practices for Standard 3 on “Curriculum Planning and Instruction” state that educators “design differentiated curricula that incorporate advanced, conceptually challenging, in-depth, distinctive, and complex content for students with gifts and talents” (p. 4) as well as incorporate critical thinking, creative thinking, and problem-solving processes. Similarly, Gallagher and Gallagher (1994) outlined four curriculum adaptations for gifted learners: acceleration, enrichment, sophistication, and novelty.

The Integrated Curriculum Model was chosen as the theoretical framework partly because extensive research has been conducted both with programs that reflect each of the three dimensions of ICM and with curriculum that was developed using ICM as the framework. Findings confirm that gifted learners who experience these three dimensions show growth in both critical reasoning and content mastery, and that "curriculum designed for gifted learners using ICM makes a difference in the nature and extent of learning that these students will accrue" (VanTassel-Baska & Wood, 2010, p. 354). One example of the studies on ICM involved a quasi-experimental study of elementary and middle school
students (N=1200) (Little, Feng, VanTassel-Baska, Rogers, & Avery, 2007). The experimental group participated in a social studies unit designed around ICM, and showed significant growth in content knowledge (p < .007) as compared with the control group. In another study using science units based on the ICM model with high-ability students (N = 1471), an analysis of means on the posttest with the pretest as a covariant showed significant differences between experimental and control groups (p < .001) (VanTassel-Baska, Bass, Reis, Poland, & Avery, 1998). Therefore, the Integrated Curriculum Model was selected to provide a research-based framework for examining both the written curriculum and the instruction in the Governor’s School as documented through observations and interviews.

Merriam (1998) describes layers of a theoretical framework to examine how the framework relates to a study. The outermost frame - the theoretical framework- she describes as "the body of literature, the disciplinary orientation that you draw upon to situate your study" (p. 47). For this study, the frame involves the literature on curriculum differentiation for academically gifted learners, including the Integrated Curriculum Model (VanTassel-Baska & Wood, 2010). Merriam states that this outer framework specifies for the reader the topic and identifies what is known about that topic, the aspect of your focus, what is not known (the gaps), why it is important to know it, and the specific purpose of this study. The second frame is the problem statement, which is positioned within the theory and literature. In this case, the problem statement is that we do not understand enough about what makes for efficacious curriculum and instructional approaches for secondary academically gifted learners. The exact purpose of the study is then inside the problem statement and is pictured as the innermost frame in this set. Table 2.2 depicts how this framework is employed in this
research study. By thus framing the research question within the theoretical framework, literature, and larger issues, not only the purpose but also the intended impact of the research is more clearly understood.

Table 2.2

**Layers of the Theoretical Framework**

- Characteristics that make academically gifted students different learners
- Principles of differentiation for academically gifted learners
- National Association for Gifted Children Program Standards for Differentiation
- Joyce Van Tassel-Baska's Integrated Curriculum Model

The problem is that we do not understand enough about what makes for efficacious curriculum and instructional approaches for secondary academically gifted learners.

| How do the curriculum and instructional approaches of the Governor’s School of North Carolina address the needs of secondary academically gifted learners? |

**Differentiation in mathematics using the theoretical framework.** The three dimensions of the Integrated Curriculum Model can be applied in each of the four content areas proposed for study. Because mathematics is sequential and hierarchical, advanced content plays a key role in differentiation for gifted learners. Much of the research around mathematically gifted learners and curriculum focuses on the need to pre-assess students’ levels of mastery and provide appropriate acceleration (Rotigel & Fello, 2004). An
accelerated curriculum that presents advanced content might include advanced calculus or complex theories concerning infinity. Process/product differentiation involves open-ended questions, elaborate written explanations of mathematical solutions, and the examination of patterns and number relationships. Issues/themes in mathematics emphasize the study of ideas, the philosophical basis underlying mathematical principles, and more abstract problem-solving questions (Gallagher & Gallagher, 1994).

Most mathematical instruction in regular education programs has focused on a cycle consisting of introducing students to a specific strategy or concept, demonstrating it, having students practice applying the strategy or concept, reviewing, then assessing for mastery, and beginning the cycle again. The criticism of that cycle from a critical thinking perspective is that students do not learn to think mathematically or experience the reasoning underlying mathematical proof. In a dissertation study analyzing the mathematical problem solving of mathematically gifted learners, identified students were given non-standard math problems and asked to solve them using multiple approaches (Tjoe, 2011). The results demonstrated a link between the number of approaches that students used and their past mathematical experiences, as well as a lack of willingness to “look back” and re-evaluate an approach. It also determined that their most recent math exposure, in this case their AP Calculus course, played a major role in deciding which approach to use. In other words, students employed mathematical memory rather than mathematical reasoning.

Ironically, mathematically gifted learners who have not been given direct instruction in solving specific types of problems are not as prone to plug in the most recent strategy, and instead mirror the thinking of professional mathematicians, as previously described in the
research of Bharath Sriraman (2004). In Sriraman’s study, ninth grade students who had no prior experience in geometric proofs were given non-traditional problems to solve, and intuitively and flexibly reasoned through to a solution, demonstrating a willingness to reverse and re-evaluate their thinking. Sriraman (2004) concluded that “mathematically gifted students have the natural intuitive dispositions of mathematicians” (p. 289). Evidence seems to support that mathematically gifted students have the capability of intuitive reasoning, but that instruction that is direct and didactic may hamper their ability to reason on their own, and may encourage them to simply imitate the reasoning presented by the instructor. Instruction which employs the Integrated Curriculum Model avoids this pitfall and allows students to explore advanced mathematical content using their critical reasoning skills to construct and defend their own methodology for solutions.

**Differentiation in natural sciences using the theoretical framework.** For natural sciences, advanced content includes any standards or topics that extend beyond the grade level’s curriculum into the next grade levels. For secondary students, that would include college content such as marine biology or molecular chemistry. The process/product dimension in the natural sciences might involve problem-based learning that presents students with a real-life problem from a stakeholder’s position, or student-designed experiments that examine a specified phenomenon or concept. An example of differentiating using issues and themes would be engaging students in exploring more complex systems of ideas such as the systems affected by nuclear power or the interdependence of living things.

A high school in Evanston Township, Illinois, has created an interdisciplinary science program for secondary students academically gifted in both mathematics and natural sciences
The program teaches honors physics and honors chemistry as one course in the sophomore year, providing an accelerated pace for those students. In addition, three types of independent studies are offered – 1) independent courses with a mentor or neighboring university for credit, 2) non-credit investigations of a topic of interest, and 3) hands-on laboratory or mentorship experiences. They also offer a significant number of opportunities for students to participate in academic competitions. Not only is the program offering advanced content through the accelerated pace of two courses in one year, but students are involved in developing independent studies that center on sophisticated products. One example given was of a physics independent study in which students wrote their own computer programs to simulate various chaotic mechanical devices and fractal generators. However, no description was given that would indicate that the third dimension of the Integrated Curriculum Model, themes and ideas, is addressed through this school’s program. According to the program’s own research, “approximately 95% of all graduates who have taken the Chemistry/Physics Program have reported in surveys that they definitely feel better prepared for college and careers not only because they had college-level material in high school, but also because of the study skills and time-management skills they developed by taking on multiple challenges that were offered outside of the standard curricula” (Ngoi & Vondracek, 2004, p. 146).

Another secondary gifted science program, Byram Hills High School Authentic Science Program in New York, takes a different approach (Robinson, 2004). Students selected for the program in this public, non-magnet school participate in four years of science classes which build on developing scientific thinking through the scientific process. What the
Integrated Curriculum Model would term the process dimension and big ideas/themes dimension of science are at the core of the program. According to the program’s creator, Dr. Robert Pavlica, “the purpose of the program is to have students do authentic science research as a way of life” (p. 150). The program has been highly successful in the short-term for students, with remarkable success in having semi-finalists and finalists in the Intel Science Talent Research Competition (formerly the Westinghouse Science Talent Search). It also has been highly successful in terms of its graduates pursuing science and math careers. Dr. Pavlica stated that “approximately 58% of the students who have graduated from my program in science research are presently MDs or getting their MDs, are Ph.D.’s or getting their Ph.D.’s, are engineers or getting their engineering degrees” (Robinson, 2004, p.150). In addressing issues of equity in differentiation within a public high school, Dr. Pavlica provides the following description:

Let me give you an analogy. I compare my students to different size glasses: a whiskey glass, a water glass, and a pitcher. As long as you have a whiskey glass that is filled to overflowing, the child is doing all that he or she can do. If you have a water glass that is filled to overflowing, the child is doing all that he or she can do. If you have a pitcher that is filled to overflowing, the child is doing all that he or she can do. So, in my class, I have whiskey glasses, water glasses, and pitchers all filled to the top and overflowing. That is the teacher’s role: to differentiate by making sure that each child is filled to the top and overflowing by having the student do the appropriate activities. (p. 153)

**Differentiation in social science using the theoretical framework.** In social science, gifted learners seldom experience content acceleration, because the content does not have a
natural sequence or hierarchy. Instead, teachers are more likely to provide advanced content by building on the topics explored at that grade level, such as more in-depth study of a specific time period, historical figure, battle or war, or a country’s history (Gallagher & Gallagher, 1994). Examples of differentiated products would be the biographical study of one leader or an independent research study on leadership traits of multiple world leaders. Content can be centered on such abstract themes as power or conflict, or the examination of an issue such as the practice of colonization by different countries in different time periods (Gross, Sleap, & Pretorius, 1999).

One secondary social studies approach designed for gifted learners, particularly from disadvantaged backgrounds, utilizes Problem-Based Learning (PBL) to address the process/product dimension and the issues/themes dimension of the Integrated Curriculum Model (Gallagher, 2000). The Javits grant project described in the research was implemented in three school systems in North Carolina, and entitled P-BLISS (Problem-Based Learning in the Social Sciences). The researcher for this Governor’s School study served as the site coordinator, overseeing implementation of P-BLISS in one of the school districts. In one example of a Problem-Based Learning unit that was designed through P-BLISS, secondary students were given a letter addressed to Congressmen from California and dated February 11, 1882. Through this problem introduction, they were placed in the stakeholder position of a Congressman faced with deciding how to vote on the Chinese Immigration Act. Students were engaged in complex, meaningful reasoning and sophisticated research to determine the complexity of the issue and the most appropriate way to respond. By utilizing graphic representations of the theme of individuals, groups, and
institutions, students moved from specific issues to more abstract principles. Based on the implementation and evaluation of P-BLISS, Shelagh Gallagher (2000) concluded the following:

The P-BLISS curriculum provides evidence that instructional materials can be used effectively to find and serve disadvantaged gifted students, but several critical elements are necessary for this to happen. First and foremost, the curriculum must thoughtfully combine meaningful topics, substantive content, challenging activities, and opportunities for self-direction. (p. 57)

**Differentiation in English language arts using the theoretical framework.** In English language arts, when students master vocabulary, writing conventions, grammatical structures, or a piece of literature, advanced content can be an option. This content might include higher levels of vocabulary or more sophisticated reading material. Content sophistication is achieved by organizing large portions of the language curriculum around abstract themes, such as power, systems, interdependence, or patterns. From these themes flow the guiding questions, instructional activities, and products. To achieve differentiation of processes and products, teachers might allow a student to read about a topic of interest, research an issue of importance, or address an ethical dilemma. For example, in a study of the poetry of Robert Frost, a student might examine primary sources such as a video of Frost reading “The Gift Outright” at John F. Kennedy’s inauguration, then read newspaper clippings from the time to assess the public response to Frost’s reading (Purcell & Eckert, 2006). The analysis of that response can then be compared to the response to Maya Angelou’s reading her original poem at President Clinton’s inauguration to understand the role of poetry in different time periods.
An appropriate product could involve the selection of poetry to be read at each of the Presidential candidates’ potential inaugurations, reflecting that candidate’s perspectives and policies. Differentiation can also be achieved by organizing large portions of the language curriculum around abstract themes such as power, systems, interdependence, or patterns. From these themes flow the guiding questions, instructional activities, and products.

The dimension of the Integrated Curriculum Model that concerns process and product requires a different kind of questioning on the part of the instructor. An experimental project was conducted at a rural Midwestern high school with eight high school seniors who met twice weekly for three weeks before school to participate in a discussion of John Grisham’s novel *Skipping Christmas* by comparing it withDickens’ *A Christmas Carol* and examining the issues of conflicting values within both works (Sriraman & Adrian, 2004). Existential questions that challenged students’ thinking were carefully constructed to initiate depth of thinking and discussion. Examples of those questions are as follows: “Is our view of reality our own or similar to those with whom we live?” and, “Are some values better than others?” (Sriraman & Adrian, 2004, p.100) Student responses had to be defended by specific examples from the text or from their own lives. These questions led to responses from students that allowed them to examine a piece of literature that would not be considered advanced content, *Skipping Christmas*, in a more abstract and complex manner through the process of critical thinking. For example, one student, responding to a classmate’s discussion on the relationship between religion and morality, stated that an individual “can be moral without being religious. In the context of the book, it is clear that Luther is not religious. However, one cannot take his disdain for Christmas to draw conclusions about his
morals or his will to do good” (p. 101). The authors of the research reflected on the outcomes:

While it is generally true that gifted students show an affinity for philosophical discussions, our observation of this group of students over the school year indicated that some were unwilling to voice their thoughts and opinions on randomly posed existential questions (e.g., “What is the meaning in life?”). However, given the context of a reading, many of these students were willing to generalize their thoughts from the reading to life. (p. 99)

Overall, these academically gifted learners, based on the transcript of their discussions provided in the article, were able to generate a depth and complexity of critical thought beyond that of their age expectations, even in a voluntary before-school setting. The authors summarized their findings in the following way: “The critical thinking demonstrated by the gifted learners in their discussion of Skipping Christmas indicates that they were willing to discuss questions of belief, morality, and values” (Sriraman & Adrian, 2004, p.105).

**Governor's Schools, Residential Schools, and Summer Programs for the Gifted**

The Governor's School of North Carolina has existed sixteen years longer than even the first talent search program at Johns Hopkins University (Ybarra, 2005). Although there have been internal evaluation reports on the program, no studies to date have documented the overall curriculum and its benefits to participants. However, a few studies exist that have a more limited focus. One recent quantitative study (Milner, Coker, Buchanan, Newsome, Milner, Allen, & Williams, 2009) compared 10.5% of the Governor’s School West population, 37 students, with a control group of 14 non-attending students with equivalent
aptitude. Each student in both groups took four assessment: a portion of the Slosson’s Arlin Test of Formal Reasoning (ATFR); the University of Minnesota’s Defining Issues Test (DIT) for moral reasoning; the Kaleidoscope Profile from Performance Learning Systems to measure learning-style preferences; and the Future Inventory, to measure the students’ life expectations, awareness of international and national issues, and self-assessment on a socio-philosophical continuum. The study found that the Governor's School attendees outperformed non-attendees in two areas: intellectual growth and personal maturity. For example, on the Defining Issues Test (DIT) of moral reasoning, the Governor’s School attendees (experimental group) showed an increase of 3.80% from the pre-test to the post-test (from 43.17 to 46.97), while the control group showed only a .49% increase (36.00 to 36.49). In a six-week period, the experimental group showed six times more growth in moral reasoning based on these results. On the ATFR test of cognitive maturity, the experimental group showed a gain of 0.167, while the control group’s gain was only 0.070 in the same length of time. Considering that the treatment was only a six-week program, the gains of the experimental group are worthy of note.

In a study of Governor’s School of North Carolina students that used a different design (Milner, Ferran, & Martin, 2003), researchers randomly selected approximately one third of the students at Governor’s School East to take a pre-assessment of formal reasoning, and administered the same test to approximately one third of students at Governor’s School West as a post-assessment at the end of the six-week program. Of the pre-assessment students, 29.17% answered correctly and provided a complete explanation; yet, 58.3% were unable to answer the problem at all, and another 12.5% provided no explanation. For the post-
assessment, slightly more than half of the students answered correctly from Governor’s School West, while 39.42% responded incorrectly and 11.54% gave a partially-correct answer. The increase from less than 30% correct to more than 50% correct student responses was noteworthy in a six-week period. A second assessment, the Future Inventory, was administered to the same students at Governor’s School East as a pre- and post-assessment. Of the 30 students surveyed, 63.3% demonstrated substantial change in at least one of the four categories, indicating major changes in their future college and career plans at the end of Governor’s School. For example, 33% of students expanded their thinking in the area of “Possible Careers” and “Future Residence.” However, in the last assessment, the Defining Issues Test, students’ moral reasoning skills remained unchanged, results that differed from those in an earlier master’s thesis study. Researchers hypothesized that this may be due to errors in administration.

Research studies have also been conducted on other summer programs for academically gifted learners. A study conducted with participants in the Duke University Talent Identification Program (TIP) summer courses demonstrated that participants’ ACT scores in high school increased as a result of the intensive, accelerated summer program (Schiel, 1998). Another study found that Duke TIP summer participants took more AP math courses in high school (Li, Alfeld, Kennedy, & Putallaz, 2009). The Duke TIP Program is modeled after the first Talent Search Program developed by Dr. Julian Stanley at Johns Hopkins University and originally entitled the Study of Mathematically Precocious Youth (SMPY), now called the Center for Talented Youth (CTY). In his early work with the Talent Search Program at Johns Hopkins, Julian Stanley (2005) determined that the highly mathematically
gifted students in their summer program were able to master one to two years of high school algebra and geometry in three weeks (Davis & Rimm, 1985). Another study (Jones, 2009) examined fifteen state-supported residential math and science schools and their benefits. Although the researcher readily admits that these intense residential programs are not for all bright students, he did conclude that for the attendees “the schools are a relief from traditional settings. They are liberating environments that allow students to learn at a pace suited to their talents and be surrounded by intellectual peers” (p. 498).

Other research studies examining the effects of summer opportunities for gifted learners have focused on surveys of students and parents (Adams-Byers, Whitsell, & Moon, 2004; Dorsel & Wages, 1993; McHugh, 2006; VanTassel-Baska, Landau, & Olszewsk, 1984) and have documented the social and emotional benefits of such programs. VanTassel-Baska, Landau, and Olszewsk (1984) surveyed 117 parents and 85 regular school personnel related to participants in the Midwest Talent Search summer program at Northwestern University. Six months after the program ended, 97% of parents reported that the greatest benefit of the summer program was the quality of friendships that their children formed with other academically gifted students. However, 90% of parents also reported that participation in the program had a positive effect on their children’s academic development as well. Enersen (1993) conducted a phenomenological study of twelve students who had participated for three years in a similar summer program at Purdue University. The students and one parent for each student were interviewed using open-ended questions. The major findings were that participants had significant unmet needs in their regular school environment, and that the greatest benefits of participation in the summer program were the friendships formed.
In a study of 140 rising 8th through 11th graders in a university-based summer program for academically gifted math and language arts students, participants experienced a significant increase in their social self-concept and peer relations over the three weeks of the program (Rinn, 2006). Interviews and questionnaires conducted at a summer program at Purdue University with 44 academically gifted students in grades 5 – 11 demonstrated a preference for homogeneous grouping academically (Adams-Byers, Whitsell, & Moon, 2004). McHugh (2006) reports that these studies “provide a foundation for further exploration of the impact of summer residential programs on gifted and talented students and demonstrate that both quantitative and qualitative research methods can be effective and useful in exploring these areas” (p. 179).

Although the social and emotional effects of a program targeted to academically gifted learners might be the short-term benefit, few studies have examined the long-term academic benefits of such programs. The first longitudinal study focusing on a Governor's School’s benefits was conducted through the Governor's School of Georgia (Gold, Koch, Jordan, & Pendarvis, 1987) from 1965 to 1985. The twenty students completed a survey in 1965 after participating in the Governor's School, then completed a similar survey twenty years later. Shortly after completing the program in 1965, the students indicated overall that the social aspect of affiliating with other gifted students was the most valuable element of the program. However, twenty years later, the same individuals were surveyed, and they stated that the greatest impact came from the Governor’s School classes, with friendships ranked second. The most profound long-term effect was related to career decisions. Former students indicated that the Governor’s School experience made them more flexible in their vocations
and more likely to change careers. It is possible that the short-term social/emotional effects of the research studies on Governor’s School would yield a long-term focus on academic benefits when students have the perspective of distance, time, and their college experiences to realize those benefits.

Not all research studies of summer gifted programs have had measurable positive results. A research study on a summer enrichment program in Germany found only minimal significant differences in academic growth between summer program participants and an equally-gifted control group 10-12 years after the program (Hany & Grosch, 2007). In discussing the findings, the researchers explored the possibility that German schools already provide a challenging curriculum to gifted learners. However, they pointed out that this may not be true in other countries, citing the differences between Math Olympics competitors from the U.S. who have frequently participated in out-of-school programs and their equally-talented counterparts in Finland who seldom participate in such programs. Such a distinction only accentuates the need for programs in the United States to develop outstanding academic talent, typically only offered outside of the regular school day or academic year.

Olszewski-Kubilius (2010) lists the research-documented benefits of summer programs for students who are academically gifted in the STEM (Science, technology, engineering, and math) areas as the following:

…taking a more rigorous course of study, increased use of accelerative options, greater likelihood of pursuing careers and degrees in math, taking more AP classes of all types, attending more selective colleges, higher educational aspirations, females who take math in summer take more math subsequently, participate in math clubs, keep up with math-
talented boys. (p. 65)

However, Olszewski-Kubilius (2010) also describes disadvantages of summer programs for advanced STEM students, especially as compared to other options for services:

- May not be appropriate for students who are reluctant to leave home
- May not work for students who do sports or other activities during the summer months
- May not appeal to students who want to direct their own learning during leisure time
- Are tuition based and pricey
- May result in student being even more dissatisfied with home school curriculum
- May cause slight and temporary decline in academic self-concept due to BFLP (Big-fish-little-pond) syndrome
- Courses may not be recognized by local school (p. 65)

However, both the academic and the social/emotional benefits of summer Governor’s School programs for academically gifted learners have been well-documented. In her examination of past studies of Governor’s School programs, McHugh (2006) presented the following conclusions:

Findings from existent studies show that Governor’s Schools are beneficial to students’ academic, social, and emotional well-being. These findings are significant because they can be used as guides to improve current Governor’s Schools and as supportive evidence for implementing Governor’s Schools in states without such programs. In addition, they can point to an effective program model for gifted and talented secondary students. (p. 184)
Summary

Studies stemming from neurological, psychological, and educational research confirm the needs and characteristics of academically gifted learners that distinguish them from other students of their same “age, experience, and environment” (North Carolina General Statutes, 1996, para.1). Curriculum differentiated for academically gifted learners is designed to address these differing characteristics and needs by offering curriculum that is more fast-paced, complex, abstract, sophisticated, and interdisciplinary, and requires higher processes of thinking more frequently than the grade-level curriculum. At the secondary level, these needs have been traditionally addressed only by offering honors, Advanced Placement, and International Baccalaureate courses, which are also open to all students. While Advanced Placement and International Baccalaureate courses were found to provide an increased level of challenge, academically gifted students do not typically access these courses until the last two years of high school.

Governor’s Schools and other summer programs for the gifted are designed to address the lack of challenging opportunities for academically gifted secondary learners. Research has shown that these summer programs provide social, emotional, and academic benefits to participants. Students and parents report positive benefits based on participants’ being with other students who share the same needs and on gaining a greater understanding of themselves. The academic benefits are often not immediately recognized, but include the subsequent choices of more challenging classes in high school and college, the impact on future college and career decisions, and improved reasoning skills and test scores. According to an article examining Governor’s Schools as an alternative for gifted learners (Winkler,
Stephenson, & Jolly, 2012), “until quality and consistent gifted education becomes a priority, Governor’s Schools play an important role in meeting the academic and social needs of gifted children” (p. 294).

No research yet has specifically addressed what aspects of the curriculum or instruction have had lasting impact, and most research gives very little description of the curricular offerings of these summer programs other than to describe them as advanced. In stressing the need for research that examines the benefits of programs for intellectually gifted learners, Winner (2000) states that “research on the long-term cognitive and social outcomes of these methods should continue, and policy should follow from research findings rather than ideological positions” (p. 155). The aim of this qualitative case study was to contribute to the understandings of those long-term cognitive and affective outcomes for academically gifted learners who participated in the Governor’s School of North Carolina during its fifty year history.
CHAPTER 3
Methodology

Introduction

The purpose of this qualitative case study was to gain a comprehensive understanding of the major curriculum and instructional strategies employed with academically gifted secondary learners at the Governor's School of North Carolina. Capturing these insights in the program's fiftieth year of implementation provided information about efficacious teaching practices for secondary gifted learners. Particular attention was given to the curricular decisions that were made over the history of the program, the rationale for those choices, and the benefits provided to participants. The primary research question was the following: How do the curriculum and instructional approaches of the Governor’s School of North Carolina address the needs of secondary academically gifted learners?

Research Design

Because the Governor's School of North Carolina is the first and the longest-running program of its kind in the nation, it provided an intrinsic case study that yielded information unique and beneficial to understanding what works with secondary academically gifted learners. As Stake (1995) explains, the intrinsic case study is one in which the case itself is unique, and the case, rather than the issue, becomes "of highest importance" (p. 16). The intent of this study was to examine the curricular and instructional practices of the program, not to quantify the program's effectiveness or determine its fiscal impact. Qualitative research methods were selected for this study because they allowed for asking questions of why, how, and what (Hesse-Biber & Leavy, 2011). A qualitative case study design offered the best fit
for the research questions, as well as for the multiple sources of data – documents, observations, and interviews – that address those questions. As Hesse-Biber and Leavy (2011) described this fit, "the social meaning people attribute to their experiences, circumstances, and situations, as well as the meanings people embed into texts and other objects, are the focus of qualitative research" (p. 4). Furthermore, the characteristics of academically gifted learners lend a depth of perspectives and understandings that provide rich insights if captured in interviews. In the book *Methodologies for Conducting Research on Giftedness*, one of the five challenges to research in gifted education described is “to utilize, within a research design, the high levels of verbal skill and articulation that are characteristic of gifted samples in general” (Onwuegbuzie, Collin, & Leech, 2010, p. 114). Therefore, this study used a qualitative case study approach to capture and analyze data from interviews with academically gifted students and alumni, as well as key leaders, and from program documents and classroom observations that could not be adequately analyzed using quantitative methods. In addition, quantitative data from an alumni impact survey conducted by the North Carolina Governor’s School Foundation (2012) provided triangulation of the qualitative data. An overview of the research design is provided in Appendix A.

**Theoretical Framework**

Based on a traditionalist paradigm that examines knowledge through studying products of the past, the theoretical framework for this study was the Integrated Curriculum Model (ICM) developed through the College of William and Mary's Center for Gifted Education (VanTassel-Baska & Little, 2003). This model provides criteria for the examination and development of curriculum and instruction for academically gifted learners through three
dimensions: (1) the advanced content dimension; (2) the process/product dimension; and (3) the issues/themes dimension. These three dimensions formed the basis for the a priori coding used for document review, observations, and interviews. This theoretical framework aligns with the intended design of the Governor's School curriculum, provides a synthesis of multiple models of differentiation for academically gifted learners, and has a research base of its implementation to support its effectiveness. (Gallagher & Gallagher, 1994). First proposed in 1968, the dimensions of ICM were created because the field of gifted education lacked "a comprehensive and cohesive curricular framework that [used] good curricular design, [considered] the features of the disciplines under study, and sufficiently [differentiated] for talented students" (Van Tassel-Baska & Little, 2003, p. 6).

The original aims of the Governor’s School curriculum, as outlined in the program’s first curriculum guide, were “to acquaint these future leaders with the latest theories and techniques in their chosen fields, introduce them to some of the present thorny problems in the field,” and “inspire them to creative activity on their own” (Lewis, 1968, p. 2). These aims align with the three dimensions of the Integrated Curriculum Model, even though the model was created five years after the Governor’s School began. Therefore, the Integrated Curriculum Model allowed for constant comparative analysis of all data to determine the extent to which the curriculum achieves its intended aims, as well as how these three dimensions affect the lives of participants.

**Site Selection and Sampling Criteria**

The case selected for this study was a unique case in that it was the curriculum and instructional approaches of the first summer residential gifted program in the nation.
Therefore, the sites studied are the three college campuses that have housed the summer program. The original program was housed on only one campus, where it has remained for fifty years. However, an additional site, Governor’s School East, was added in 1978 in order to double the capacity of students admitted to the Governor’s School. According to one of the former Governor’s School site directors, this expansion of the program occurred because superintendents insisted that more students should benefit from the program. The location of the Governor’s School East campus was moved in 2000. Therefore, alumni and administrators from each of the program’s past and present sites were included in the interviews. During the pilot study, classroom observations and student interviews were conducted on only one campus. The choice of the curriculum and instructional approaches of the Governor’s School of North Carolina was not intended to be representative of other similar programs, but instead to stand alone as a singular case worthy of study, an intrinsic, “pre-selected case” (Stake, 1995, p. 4).

Three populations of individuals were interviewed: key curriculum and administrative leaders, students engaged in the 2012 Governor’s School program, and program alumni (Table 3.1). For alumni of the Governor’s School, a maximum variation sampling (Patton, 2002) of interviewees was used to seek representation of past student participants based on three criteria for variation: 1) representation of each of the decades of the program, 2) representation from each of the three regions of North Carolina, and 3) representation from both urban and rural settings of attendees’ home high schools at the time of participation. Effort was made to achieve the same racial and ethnic balance that had been representative of Governor's School attendees. Two of the 14 alumni interviewed, or 14.3%, were African
American. According to the interviewed program administrators from the North Carolina Department of Public Instruction, the percentage of non-White students had ranged in recent years from 17% to 21%. In addition, one alumna was self-reported as being of Arabic descent.

Only alumni who had been selected to attend the Governor's School in one of these four academic areas – mathematics, English, social science, or natural sciences – were included as interviewees, since those content areas were the only ones being examined. However, questions were asked of the interviewees concerning their interdisciplinary classes (Area II and Area III) to gain a more complete examination of all aspects of the curriculum that they experienced. Fourteen alumni were chosen from these subpopulations of alumni. Data concerning the alumni interviewed are represented in Table 3.3.

Nine alumni were chosen from a list provided by the Governor’s School Alumni Association of 126 active alumni living within a specified radius for the sake of convenience. From this list, alumni within each of the four content areas were selected based on representation of regions and urban/suburban/rural settings of the secondary schools that the alumni had attended. Information concerning race and ethnicity were not provided in the database. Because no Area I English students were interviewed during the pilot study in the summer of 2012, more English than other content area alumni were selected. When maximum variation sampling criteria produced multiple candidates to interview, zip codes were used to determine those who were accessible. Considering that this list was compiled from active alumni, this researcher chose to include other Governor’s School alumni who may not have stayed as closely connected to the Alumni Association. Therefore, three
alumni were interviewed because the researcher encountered them in a professional setting, one interviewee was referred to the researcher by the individual’s parent, and another interview was secured during the Governor’s School Reunion in July as part of the pilot study.

Key curriculum and administrative leaders who were interviewed included two Governor’s School site directors whose involvement dated back to 1970, three program administrators from the North Carolina Department of Public Instruction, two instructors from English and social science, one curriculum developer and reviewer involved in all five decades of the Governor’s School, a former Chair of the Governor’s School Board of Advisors, and a former President of the Governor’s School Alumni Association. One of the instructors was also a Governor’s School site director, and one was a former Governor’s School alumna. Effort was made to select individuals involved in key roles over time in the Governor's School's history, as well as from each of the program sites, to gauge consistency in the implementation of the program.

**Data Collection**

The focus of data collection was on the historical evolution, the structure, and the benefits of the Governor's School's curriculum and instructional program for academically gifted learners. Data were acquired from three major types of sources: program documents, classroom observations, and interviews with 2012 students, alumni, and key leaders. Both the quantity and the variety of sources provided a wealth of data to address the research questions.
Documents. Document review entailed the content analysis of curricular documents as they related to the evolution and the structure of the Governor's School curriculum and instructional approaches over its fifty-year history. The four primary documents examined were *The Governor’s School of North Carolina: Staff Report* (Carter, 1965), *Opening Windows onto the Future: Theory of the Governor’s School of North Carolina* (Lewis, 1968), the *North Carolina Governor’s School Program Document* (North Carolina Governor’s School, 2005), and the North Carolina Department of Public Instruction’s (n.d.) Governor’s School website, the information from which was retrieved in August, 2012. Parameters for this study included the curricular offerings in English, mathematics, social science, and natural sciences, as well as the interdisciplinary courses that students in those academic areas attend (Area II and Area III classes). Therefore, content analysis of the documents focused on those four content areas, Area II and Area III class descriptions, and any sections that addressed the overall development, purpose, or changes in the curriculum. The four major documents were examined for consistency, intentional changes, reflection of the three dimensions of the theoretical framework, and accuracy in describing the instruction as it was observed and as it was experienced by participants.

In addition, various data provided by the North Carolina Department of Public Instruction and the Governor's School Foundation were reviewed. These data included both program documents and survey results. In an effort to attain financial support for the fiftieth year of the Governor's School of North Carolina after the state General Assembly terminated its funding, the Foundation conducted multiple surveys collecting data from former participants. While these surveys did not provide the primary data for analysis, they were
used to confirm patterns that became evident through other sources for the purpose of triangulation, and to develop interview questions. Also reviewed, but not coded, were a report entitled *The Future of the Governor’s School: Results of a Faculty and Alumni Discussion Group* (Gallagher, J., 1992, January), the *Curriculum Review* (Foy, Caruso, Dusenbury, Hairston, Love, Milner, Sorkin, & Vorsteg, 1996) conducted by the faculty of Governor’s School West in 1996, minutes from the meetings of the Governor’s School of North Carolina Board of Governors from 1994 to 1996 when curriculum review was done, and a program document entitled *Opening windows in Area I: A self-study, 1976* (Foy, 1976). A review of these documents was employed to triangulate the data and ensure consistency of understanding about the curriculum and instructional approaches over the 50 years of implementation.

**Observations: Pilot Study Data.** In the summer of 2012, a pilot study was conducted at the Governor’s School of North Carolina which included classroom observations and interviews with students during the fiftieth year of the summer program on one of the two Governor’s School campuses. The purpose of the observations was to determine the extent to which the written curriculum is consistent with the instruction and to gain understanding of both the explicit and implicit curricula (Eisner, 1979). A total of six 75-minute observations were conducted by the researcher in each of the following classes: Area I mathematics, Area I English, Area I social science, Area I natural sciences, Area II, and Area III. The latter two, Areas II and III classes, were interdisciplinary classes. These observations were captured with a digital audio recorder, and later transcribed. In addition, notes were taken on a laptop during the observations. The only exception was the observation of Area III. Only notes
were taken by hand, because the site director suggested that discussion in the class could be sensitive, and recording it could be uncomfortable for students. This researcher also attended the 50th reunion of Governor’s School alumni and observed in two additional sessions related to careers in medicine and historical perspectives on war. At this reunion, one interview was conducted with an alumna from the previous summer. Appendix E contains the consent for permission to observe which was signed by every instructor, including the instructors at the Governor’s School reunion.

**Interviews.** Interviews were conducted with 10 students during the fourth and fifth weeks of their five week 2012 Governor’s School experience on one of the Governor’s School campuses as part of a pilot study. Data from the study were archived for use in this research. In addition, 14 Governor’s School alumni who participated in the program between 1963, the first year of the program, and 2011 were interviewed, as well as eight key leaders from across the fifty years of the program’s history. An overview of those individuals interviewed is provided in Table 3.1.

<table>
<thead>
<tr>
<th>Table 3.1</th>
<th>Overview of Interviewees</th>
</tr>
</thead>
<tbody>
<tr>
<td>2012 Governor’s School Program Participants</td>
<td>10</td>
</tr>
<tr>
<td>Governor’s School Alumni from Five Decades</td>
<td>14</td>
</tr>
<tr>
<td>Key Administrators, Site Directors, Curriculum Developers, Instructors</td>
<td>8</td>
</tr>
</tbody>
</table>
Informed consent was secured from each interviewee, as well as from the parents of the 2012 students who were all under the age of 18 (Appendix B). Alumni selected from the list of alumni provided by the Governor’s School Alumni Association were recruited using an e-mail recruitment message (Appendix C). Appendix D describes the interview protocol used for each group of interviewees. At the conclusion of each participant interview, students and alumni were asked to arrange three abstract shapes, each depicting a different dimension of the framework, in a way that best represented their own individual experiences in Area I, Area II, and Area III classes. These three depictions were drawn only after the completion of the interview questions so as not to introduce the language of the theoretical model to participants before they had described their experiences. No one interviewed expressed concern that the dimensions were irrelevant or inaccurate in describing their experiences, although a wide variety of responses to how they were related and portrayed were given. The responses to this last section of the interview protocol were analyzed but not coded because a priori coding was based on the theoretical framework and the language of that framework was introduced to the interviewee by the activity.

Student interviews: pilot study data. Ten students from the 2012 Governor’s School were interviewed. To select these students, a stratified random sampling was conducted from the published list of students accepted to that site of the 2012 Governor’s School within each content area. Within the students’ Area I content areas in which they were chosen for the program, the list included 28 students in English, 51 in mathematics, 34 in natural sciences, and 34 in social science. Seven students in each of these four content areas were selected. For example, from the list of 28 students in English, every fourth student was selected.
Likewise, for each content area, random sampling was conducted by dividing the total number of names on the list by seven and selecting seven names using the resulting quotient as the interval. The total number of students selected in the four content areas was 28 students. If a student was chosen but did not attend, the next student in order on the list was chosen for the sampling.

Although each student’s school system was indicated on the original list of accepted students, no information was provided that could determine the student’s high school size. Therefore, the maximum variation sampling criteria employed with selecting alumni could not be used. Letters of invitation (Appendix F) and informed consent (Appendix B) were sent to the 28 students through their content area faculty members. Students were invited to participate and have their parents, as well as themselves, sign the letter of consent during the students’ mid-program break in July. Ten students returned the forms – four in natural sciences, three in math, and two in social science. All ten students who provided parental and participant consent were interviewed. No explanation was provided by the administration concerning the lack of returned responses from English students. Interviews were conducted in classrooms and public gathering spaces that were convenient to the students. Audio recordings of the interviews were made on a digital recorder and saved in a secure place, and notes were taken during the interviews on a laptop computer. Pseudonyms were chosen by participants and used throughout the interview and recorded notes. A description of the pilot study interviewees is provided in Table 3.2.
Table 3.2

2012 Students Interviewed

<table>
<thead>
<tr>
<th>Area I</th>
<th>Pseudonym</th>
<th>Ethnicity+</th>
<th>S</th>
<th>Urban/Suburban/Rural</th>
<th>Region</th>
<th>High School Size*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Math</td>
<td>Brynlee</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Mountain</td>
<td>M</td>
</tr>
<tr>
<td>Math</td>
<td>Kaylee</td>
<td>AS</td>
<td>F</td>
<td>Urban</td>
<td>Piedmont</td>
<td>L</td>
</tr>
<tr>
<td>Math</td>
<td>Aria</td>
<td>AS</td>
<td>F</td>
<td>Urban</td>
<td>Coastal</td>
<td>S</td>
</tr>
<tr>
<td>Math</td>
<td>Vanessa</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Coastal</td>
<td>S</td>
</tr>
<tr>
<td>Nsci</td>
<td>Morgan</td>
<td>W</td>
<td>F</td>
<td>Suburban</td>
<td>Piedmont</td>
<td>L</td>
</tr>
<tr>
<td>Nsci</td>
<td>Carsyn</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>Nsci</td>
<td>Erik</td>
<td>AA</td>
<td>M</td>
<td>Urban</td>
<td>Piedmont</td>
<td>S</td>
</tr>
<tr>
<td>Nsci</td>
<td>Isabella</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>SocSci</td>
<td>Sophie</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>SocSci</td>
<td>Daphne</td>
<td>Italian/Chinese+</td>
<td>F</td>
<td>Urban</td>
<td>Piedmont</td>
<td>S</td>
</tr>
</tbody>
</table>

Note. NSci = Natural Science; SocSci = Social Science; W = White; AfAmer = African American; AS=Asian; + indicates that ethnicity was self-reported; S=Sex; F=Female; M=Male; *High school size was determined by the size of the high school’s junior class 2011-2012 according to http://www.ncpublicschools.org/fbs/accounting/data/; S=Small (< 100); M = Medium (100-300); L= Large (> 300).

These ten students’ impressions of the curriculum and instructional approaches were captured using the interview protocol outlined in Appendix D. Using the interview protocol during the pilot study allowed for testing the order of questions and the use of abstract visual representations of the three dimensions of the theoretical framework. The data from the pilot study, including all interviews and observations, were transcribed and archived for use in this study.

Alumni interviews. Interviews were conducted with fourteen Governor's School alumni to ascertain how instructional experiences affected their lives and which elements of
the curricular experiences were memorable and beneficial. Data describing the alumni interviewed are provided in Table 3.3.

Questions asked of alumni centered on the instructional experiences in the core academic Area I classes (mathematics, English, social science, and natural sciences), and in Area II and Area III classes, but not on the benefits that might have been provided by the residential nature of the Governor's School, the enrichment experiences such as speakers and concerts, or their relationships with other students. The interview protocol is provided in Appendix D. Furthermore, their comparisons of the Governor's School’s curriculum and instructional approaches to their own regular high school learning experiences allowed for an understanding of the elements that made the Governor’s School curriculum unique for these advanced learners. In addition, questions were asked about the impact that their Governor’s School experience might have had on college and career decisions.
Table 3.3

Alumni Interviewed

<table>
<thead>
<tr>
<th>Area</th>
<th>Year</th>
<th>Pseudonym</th>
<th>Race/Ethnicity+</th>
<th>S</th>
<th>Urban/Suburban/Rural</th>
<th>Region</th>
<th>High School Size*</th>
</tr>
</thead>
<tbody>
<tr>
<td>English</td>
<td>1966</td>
<td>Tucker</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>English</td>
<td>1984</td>
<td>Mary</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>English</td>
<td>2001</td>
<td>David</td>
<td>AfAmer</td>
<td>M</td>
<td>Urban</td>
<td>Piedmont</td>
<td>L</td>
</tr>
<tr>
<td>English</td>
<td>1963</td>
<td>DeeDee</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>S</td>
</tr>
<tr>
<td>English</td>
<td>2004</td>
<td>Vivian</td>
<td>AfAmer</td>
<td>F</td>
<td>Rural</td>
<td>Coastal</td>
<td>S</td>
</tr>
<tr>
<td>Math</td>
<td>1985</td>
<td>Elizabeth</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>Math</td>
<td>1986</td>
<td>Samantha</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Mountain</td>
<td>S</td>
</tr>
<tr>
<td>Math</td>
<td>2004</td>
<td>Sarah</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Mountain</td>
<td>M</td>
</tr>
<tr>
<td>NSci</td>
<td>2011</td>
<td>Ashley</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Mountain</td>
<td>M</td>
</tr>
<tr>
<td>NSci</td>
<td>1979</td>
<td>Jeffrey</td>
<td>W</td>
<td>M</td>
<td>Rural</td>
<td>Mountain</td>
<td>M</td>
</tr>
<tr>
<td>NSci</td>
<td>2003</td>
<td>Sally</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Coastal</td>
<td>L</td>
</tr>
<tr>
<td>SocSci</td>
<td>2007</td>
<td>Darcy</td>
<td>W/Arab+</td>
<td>F</td>
<td>Urban</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>SocSci</td>
<td>1973</td>
<td>John</td>
<td>W</td>
<td>M</td>
<td>Rural</td>
<td>Mountain</td>
<td>L</td>
</tr>
<tr>
<td>SocSci</td>
<td>1968</td>
<td>Edward</td>
<td>W</td>
<td>M</td>
<td>Rural</td>
<td>Coastal</td>
<td>S</td>
</tr>
</tbody>
</table>

Note. NSci = Natural Science; SocSci = Social Science; Year indicates the year attended GS; W = White; AfAmer = African American; W/Arab = White of Arabic descent; + indicates that ethnicity was self-reported; S=Sex; F=Female; M=Male; High school size was determined by the size of the high school’s junior class 2011-2012 according to http://www.ncpublicschools.org/fbs/accounting/data/1; S=Small (< 100); M = Medium (100-300); L= Large( > 300).

Key Leader Interviews. Interviews were also conducted with a total of eight key curriculum and administrative leaders to obtain a more complete description of the curricular and instructional practices. Attention was given to how and why the curriculum was designed and changed over the fifty-year history of the program, as well as what practices showed benefits. Efforts were made to interview those curricular and administrative leaders who were involved from the inception of the Governor's School or for multiple years in order
to shed light on the extent to which the present curriculum is consistent with the original conceptualization. Given that the Governor's School has existed since 1978 on two campuses, issues related to the consistency of implementation of the written curriculum were examined to consider Stake’s (1995) recommendation that "the more the case study is an intrinsic case study, the more attention needs to be paid to the contexts" (p. 64). All interviews were conducted and recorded in person at locations convenient to the interviewees. Notes were taken during the interview on a laptop computer, and digital audio recordings were made and later transcribed. The length of interviews averaged 35 minutes, with a range from 6 minutes to 92 minutes. These interviews with key leaders were for the purpose of triangulation of the data from the written documents.

Data Analysis

In order to provide consistency in the analysis of data from all sources (four major documents, six classroom observations, 32 interviews), directed content analysis (Hsieh & Shannon, 2005) was applied to all data in a predetermined order of sources: written documents in chronological order, classroom observations, then 2012 and alumni interviews. Both codes that were informational and codes based on the theoretical model constituted a priori coding. Additional inductive codes emerged from the constant comparative process. The codebook developed for this study is provided in Appendix G. Each data source was analyzed four times. The first time was a thorough reading to apply a priori coding and to select data for the development of inductive codes that emerged. The second was to employ a color-coding system by hand for each theme to code the data and look for the emergence of additional inductive codes. The third time was to ensure that all codes had been applied to all
data. The fourth time was to tabulate the codes within each source and look for patterns within each content area and across all content areas. Tabulations of this coding are presented as three frequency charts in Appendix H: one for data from program documents, one for data from the six classroom observations, and one for data from the interviews with 14 alumni and 10 students. Every code with a frequency of three or greater from the data source was included in the chart.

Content analysis (Krippendorff, 1980) was conducted first on the four major written curricular documents. This content analysis employed *a priori* coding based on information about the source as well as on the themes from the theoretical framework, the Integrated Curriculum Model (ICM). The ICM Model described three dimensions of effective differentiated gifted curriculum: advanced content dimension, process/product dimension, and issues/themes dimension (VanTassel-Baska & Little, 2003). The theoretical framework was used throughout all data analysis to provide for greater applicability of the results to other differentiated curricula for gifted learners. As Krippendorff (2013) notes, “content analysts who rely on conceptualizations that have proven successful elsewhere have a better chance of contributing to existing knowledge” (p. 366). The ICM's three dimensions of differentiated gifted curriculum (VanTassel-Baska & Little, 2003) allowed for broad analysis of both the written curriculum as well as data from observations and interviews. These three dimensions of ICM created the framework by which data were triangulated and analyzed (Leech & Onwuegbuzie, 2007) to determine the existence and benefits of each dimension.

Although different forms of content analysis are employed in qualitative research, for the purpose of this study, a “contingency analysis of attributes” (Holsti, 1969, p. 7) was used.
This form entailed determining if an attribute, such as advanced content or issues and themes, did or did not exist in each section of the documents. Because the themes were not always mentioned directly, contingency analysis of attributes proved a more consistent and accurate means of analyzing data. For example, advanced content may not have been referred to directly in a document, but instead may have been inferred, such as in the 1965 (Carter) program report which stated the goal “that the level of instruction and learning be more generically theoretical than is appropriate for the generality of high school students” (p. 17). Therefore, this process of contingency analysis of attributes was applied to every data source using the codebook developed (Appendix G), allowing for more consistent and thorough analysis of the data across sources, content areas, and time periods. The coding process employed the sequence and purpose of directed content analysis, beginning first with predetermined codes based on the theoretical framework, and later adding new categories or subcategories of existing codes (Hsieh & Shannon, 2005).

The classroom observations and interviews of 2012 Governor's School students were conducted through a pilot study in the summer of 2012 and were archived for use in this dissertation research study. All of these sources of data were subjected to constant comparison analysis using the deductive codes determined from the ICM framework, information codes, and inductive codes that emerge from the data (Leech & Onwuegbuzie, 2007).

Although specifying the use of content analysis within this intrinsic case study might provide some clarification, it still does not indicate how the data were analyzed. Thorne (2000) described choices of qualitative data analysis as falling into categories of
phenomenological approaches, ethnographic methods, narrative and discourse analysis, and constant comparative analysis. This study employed constant comparative analysis, beginning with one piece of data and comparing all subsequent data to the previous. Boeije (2002) suggests that with all that has been written about constant comparative methods and techniques, “researchers often describe at great length how their studies were carried out, but remain vague when it comes to giving an account of the analysis” (p. 392). Based on a research study conducted with couples dealing with multiple sclerosis, Boeije (2002) developed a five-step process of constant comparison:

1. Comparison within a single interview.
2. Comparison between interviews within the same group.
3. Comparison of interviews from different groups.
4. Comparison in pairs at the level of the couple.
5. Comparing couples. (p. 395)

For the purpose of the research on the Governor’s School curriculum, Boeije’s model was adapted and applied to provide a systematic progression of constant comparative analysis, applying a priori codes and developing emergent codes in a pre-determined order. The following five-step process was used (See Appendix A):

1. Comparison between documents from different time periods and within each discipline/Area.
2. Comparison between documents and interviews with key players.
3. Comparison between documents and classroom observations in each discipline.
4. Comparison within interviews in each discipline (math, English, natural science, social sciences).

5. Comparison across disciplines among interviews, observations and documents. Therefore, the written curriculum documents of the Governor’s School were analyzed chronologically, starting with the oldest, using a priori coding as well as inductive coding that emerged. These documents provided a history of both the intent and the implementation of the curriculum over the 50 years of the Governor’s School program. Then those inductive and a priori codes were used in the analysis of interviews with key administrators and curriculum developers to determine if the written curriculum was consistent with the vision and understanding of these key individuals. Next, observation data from the 2012 Governor’s School were analyzed and compared to the written documents and key leaders’ interviews to examine the alignment of the explicit and implicit curricula, that is, to confirm that the intended structure of the written curriculum was the same as that employed in instruction. Then, interviews with ten 2012 Governor’s School participants and interviews with 14 alumni of the Governor’s School from the five decades of its operations were coded, analyzed, and compared to findings from other data sources to understand the benefits of the curriculum and instructional approaches. Lastly, all data were analyzed by content area or class type (Area II or Area III interdisciplinary classes).

One of the strengths of constant comparative strategies for this data analysis is its provision of a means of addressing the research questions by connecting multiple data sources with the same theoretical framework. Theory-guided analysis is one of the unique advantages of qualitative content analysis (Kohlbacher, 2005).
The primary research question for this study was: How do the curriculum and instructional approaches of the Governor’s School of North Carolina address the needs of secondary academically gifted learners? In order to examine whether or not the Governor’s School’s approaches align with current research and practice, one of the secondary questions proposed was: How do the curriculum and instructional approaches of the Governor's School of North Carolina reflect best practices for the teaching of academically gifted learners? The Integrated Curriculum Model (VanTassel-Baska & Little, 2003) has proven an effective measure of best practices for this population of students. Thus, using the three dimensions of this model to create a priori coding allowed an examination of how the Governor’s School curriculum reflects what is known to be best practices. Likewise, the absence of these dimensions could indicate a lack of alignment with best practices. The additional secondary questions, which examine benefits to participants and changes made over time, were also examined through the theoretical lens of the ICM to determine if the benefits align with the dimensions of the model and if any of the changes were related to proven practices as described by the three dimensions.

Merriam (1998) categorized coding into two levels – information that identifies the data (such as the gender, race, region and school size of Governor’s School alumni, as well as content areas) and interpretative constructs related to analysis of the data (such as the coding related to the theoretical framework of the Integrated Curriculum Model). These two types of coding were used extensively in the data analysis. The a priori coding that was determined prior to examination of the data is represented in Table 3.4 for the themes and codes related to the interpretive construct of the Integrated Curriculum Model.
Table 3.4

Themes and Codes - Theoretical - a priori

<table>
<thead>
<tr>
<th>AC (Advanced Content)</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>HP (Higher Order Processes)</td>
<td></td>
</tr>
<tr>
<td>HP-P (Higher Order Products)</td>
<td></td>
</tr>
<tr>
<td>IT (Issues/Themes)</td>
<td></td>
</tr>
<tr>
<td>IT-I (Interdisciplinary)</td>
<td></td>
</tr>
</tbody>
</table>

Table 3.5 presents a description of the *a priori* themes and codes that provided information about the data sources. Data were coded based on whether the data addressed a content area of Area I, Area II, Area II, or general comments about the overall curriculum. Furthermore, coding specified the source of the data, whether secured from program documents, classroom observations, or interviews, and related information for each of those data sources.
Codes and themes also emerged as the data were analyzed. Four major themes evolved as emergent themes: development, structure, benefits, and changes. Each of those themes was broken into specific codes to represent components of each. For example, in relation to the structure of the curriculum, the data that referred to characteristics of academically gifted learners were coded as “S-CHA” to address the primary question by tracing the relationship between the curriculum and the characteristics that are distinct to academically gifted learners and their needs. Some codes, such as “S-CIR” which related to the classroom environment’s being arranged in a circular fashion for discussion, emerged from both
interviews and classroom observations as having contributed to the development of critical thinking and the intensity of recall for alumni. The codebook (Appendix G) provides examples of quotations from the various data sources that represent each of the emergent and a priori codes. A representation is provided in Table 3.6 of the emergent codes and related themes.

Table 3.6

Themes and Codes - Emergent.

<table>
<thead>
<tr>
<th>S (Structure)</th>
<th>D (Development)</th>
</tr>
</thead>
<tbody>
<tr>
<td>S -A (Admissions Criteria)</td>
<td>DH-Development-History</td>
</tr>
<tr>
<td>S-C (Written Curriculum)</td>
<td>DP- Development-Purpose</td>
</tr>
<tr>
<td>S-CHA (Characteristics)</td>
<td>B-(Benefits)</td>
</tr>
<tr>
<td>S-CHO (Choice)</td>
<td>B- HS-(compared to high school)</td>
</tr>
<tr>
<td>S-CIR (Circle)</td>
<td>B -P(Benefits of Peers)</td>
</tr>
<tr>
<td>S-F (Faculty)</td>
<td>B-I (Benefits of Area I)</td>
</tr>
<tr>
<td>S-G (Grades)</td>
<td>B-II (Benefits of Area II)</td>
</tr>
<tr>
<td>S-I (Instructional Strategies)</td>
<td>B-III (Benefits of Area III)</td>
</tr>
<tr>
<td>S-M (Materials)</td>
<td>B-U (self understanding)</td>
</tr>
<tr>
<td>S-S (Schedule)</td>
<td>B-C (Benefits related to careers)</td>
</tr>
<tr>
<td>S- TS (Trips/Speakers)</td>
<td>B-COL (Benefits related to college)</td>
</tr>
<tr>
<td>S-V (Variety)</td>
<td>C-(Changes)</td>
</tr>
</tbody>
</table>

All data were examined four times, first for the application of theoretical codes and the identification of data for emergent codes, the second and third times for application and color-coding of the emergent codes and assurance that all theoretical codes had been properly applied, and the fourth time for the tabulation of all codes to analyze for patterns. This procedure was modeled after strategies developed for direct content analysis, which relies on a theoretical framework for initial
coding (Hsieh & Shannon, 2005). Finally, a chart was developed to examine the frequency with which each code was represented in program documents, in classroom observations, and in interviews with students and alumni. These three frequency charts are presented in full in Appendix H for every code that appeared three or more times within the data source, and relevant components are incorporated into the presentation of the findings in Chapters 4 and 5.

**Research Dependability and Trustworthiness**

To ensure dependability, efforts were made to triangulate data that provide an accurate depiction of the curriculum, its changes, and its benefits for participants. By analyzing all data using the Integrated Curriculum Model's three dimensions, patterns of consistency – between the written and the executed curriculum, between the curriculum as it was implemented initially as compared to in more recent years, and between the implementations at each of the sites – provided a large quantity of contextual data for a more holistic, multidimensional picture. Lincoln and Guba (1985) suggest considering the "dependability" or "consistency" of the data results and interpretation, not necessarily looking at whether or not the study could be replicated but whether or not the findings are consistent with the data. Given that this study examined one case that evolved over fifty years, consistency and dependability focused on the replication of the benefits and structure of the curriculum over time and in different campus settings. The large amount and variety of data from this study allowed for a thorough analysis of the Governor's School curriculum and instructional practices, their benefits to participants, and the extent to which they reflect defensible research in differentiation for the gifted secondary learner.

Trustworthiness was dependent on the accuracy of notes and documentation, on sampling strategies, and on the trustworthiness of the coding (Hesse-Biber & Leavy, 2011).
Sampling strategies have been previously described, and were carefully implemented. In addition to the predetermined criteria for sampling of alumni, care was taken to select both alumni who were included in the Governor’s School Alumni Association database and also alumni who had not remained involved in the association and who might represent less positive perspectives related to their experiences. Audio recordings and notes on a laptop computer were employed with each interview and observation, with the exception of the Area III class observation for which only laptop notes were taken. (This change was due to the sensitive nature of student discussion, and was agreed upon by the site director and researcher.) The researcher transcribed all audio recordings. For any direct quotations used in the data, the researcher listened again to the recordings to ensure accuracy of the quotations. Member check was conducted with two interviewees who confirmed the accuracy of the transcriptions.

To address the last aspect, trustworthiness of coding, a codebook was developed (Appendix G) for theory, informational, and emergent codes (DeCuir-Gunby, Marshall, & McCulloch, 2011). Inter-coder reliability was employed by having another educator with expertise in gifted education apply the codes and codebook to the transcriptions of two interviews in order to determine consistency. Of the 29 codes that the other educator applied, 25 (86%) were consistent with the codes initially applied to the same interview data by the researcher. (Three of the four inconsistencies related to the other educator’s application of the code “B-U” or “Benefit-Self understanding” for any reference to the interviewee’s own self-awareness. The intended application of the code was to indicate any direct benefit of the Governor’s School experience on the individual’s self-understanding.)
Limitations of the Study

Because this study is bounded by one intrinsic case, which is the curriculum and instructional approaches of the Governor's School of North Carolina, generalizations of the program experience to other programs is limited. However, rich, thick data were correlated to a well-researched theoretical framework, which should allow for applicability to other secondary gifted curricula. As Gall, Gall, and Borg (2007) stated, “the term applicability, rather than generalizability, is more appropriate for this goal of qualitative research because it is based on different processes and types of evidence” (p. 477). Even then, generalizability is limited to the extent that this case resembles other cases, such as the curriculum for other secondary academically gifted services. In addition, the study did not examine the specific benefits particular to the residential nature of a program for the gifted or the social and emotional benefits to participants of affiliating with other academically gifted peers. Examination of the Governor’s School curriculum for Area I classes, the disciplinary studies, was delimited to the four academic areas of mathematics, English, social science and natural sciences, and did not analyze the Governor's School curriculum developed for the arts or foreign languages. The small sample size of interviewees was not intended to be representative of the 32,000 students who have attended the Governor’s School, but instead to provide a purposive sampling for in-depth understanding. Furthermore, because students who attend the North Carolina Governor’s School demonstrate motivation to learn by their willingness to attend an intense academic program in the summer, the participants are not representative of all academically gifted secondary students, especially those who might be disengaged from school and underachieving in their high school environments.
This study did not gather or quantitatively analyze data related to the economic impact of the Governor's School or to participants' overall satisfaction with the program. It was not the intent of this study to be a full longitudinal study of the fifty years of the Governor's School, nor to be a comprehensive program evaluation. Furthermore, issues related to the political climates within which the state-funded Governor's School has existed over fifty years were not a focus of this study.

Likewise, the analysis of the data was not without limitations and complexities. The volume of data provided the most significant challenge. Managing the rich data from the content analysis of the curricular documents, the classroom observations, and multiple interviews required a systematic, consistent approach. However, such triangulation from multiple data sources was needed to address thoroughly the research questions and ensure the dependability and consistency of results as they reflect the Governor’s School curriculum for gifted learners. In addition, two frequent problems that arise in content analysis concern inference and reliability (Titscher, Meyer, Wodak, & Vetter, 2000). Inference involves drawing conclusions about the whole text from a sample. This problem was minimized by having the text defined as all sections of the four major documents that describe designated Area I classes (English, natural sciences, mathematics, and social science), Area II classes, and Area III classes, and the overall curriculum.

Another limitation of the study’s use of data analysis concerned the development of the coding itself and issues surrounding the “researcher as instrument of inquiry” (Piantanida & Garman, 1999). Literal semantic content analysis, such as word count, would not yield effective results in this study. For example, seldom would the theoretical framework
dimension of “advanced content” be directly referred to by that term within the curriculum.
Yet, evidence of advanced content could be extrapolated from references within the
Governor’s School curriculum to topics and concepts that go beyond those in the regular
secondary curriculum and from interview data in which participants compare their
Governor’s School experiences to their regular instructional programs (Krippendorff, 2013).
Noting such differences required expert knowledge of both curriculum differentiation for
academically gifted learners and the regular curriculum for secondary students in North
Carolina. Efforts were made to address the vérité of this research by careful documentation
of both the development of the coding and examples of passages which reflect that coding in
codebook included as Appendix G (DeCuir-Gunby, Marshall, & McCulloch, 2011).

The background experience of thirty years in gifted education that the researcher brought
to this study contributes to the vérité of the research as well. The researcher has designed
and administered system-wide K-12 programs for academically gifted learners in two school
districts over eight years, taught gifted learners in K-5 for 12 years, served as a consultant to
four secondary Javits grant projects at the University of North Carolina at Chapel Hill and
the University of North Carolina at Charlotte, and provided professional development for K-
12 teachers in North Carolina and Virginia for 26 years. Although no formal relationship
exists with the Governor’s School of North Carolina, the researcher has taken educators
participating in professional development to observe at the Governor’s School for four
summers, ending in 2006. She also served on the North Carolina Association for the Gifted
Board of Directors, an organization that was heavily involved in advocating for the
reinstatement of funding for the program by the North Carolina General Assembly in 2012.
While a background in gifted education provided critical expertise for analyzing the data, caution had to be taken to remain aware of biases toward differentiated instruction for gifted learners by systematically applying the coding from the theoretical framework and adhering to the rigid structure of constant comparative analysis. The paradigm that has most shaped the researcher’s thinking is pragmatism, which is reflected in the disposition of the research questions toward issues surrounding which practices are effective and have lasting benefits for students.

**Summary**

In conclusion, systematic analysis of the written and implemented curriculum of the Governor’s School of North Carolina provided rich, dense descriptions of what the curriculum is and how it addresses conceptual understandings of differentiated instruction for academically gifted learners. Care and caution were invested to ensure the accuracy, rigor, and integrity of this research. By employing existing methodologies and consistent techniques of analysis, the primary research question was addressed: How do the curriculum and instructional approaches of the Governor’s School of North Carolina address the needs of secondary academically gifted learners?
CHAPTER 4

Findings

Introduction

This study examined the ways in which the curriculum and instructional approaches of the Governor’s School of North Carolina have addressed the unique needs of academically gifted secondary learners. Data sources included both the explicit curriculum as described in the written documents and the implicit curriculum as captured through classroom observations and interviews (Eisner, 1979). Content analysis was conducted on the four primary curriculum documents developed for the Governor’s School over its fifty year history. In addition, observations were conducted in the summer of 2012 in six classrooms, and interviews were conducted with ten students during the 2012 summer session, 14 alumni across the five decades of the program, and eight program administrators and curriculum reviewers, including two instructors. The combination of document analysis, observations, and interviews aligned with VanTassel-Baska’s (1989) observation that “effective differentiation takes into account both the written and the delivered curriculum” (p. 13).

Constant comparative analysis was applied to all of the data using a priori coding based on both the theoretical framework of the Integrated Curriculum Model and informational coding that described the sources. Additional codes evolved from the data in the order in which they were examined for constant comparative analysis. Analysis was conducted sequentially in the following order: written documents; interviews with key administrators, curriculum reviewers, and instructors; classroom observations; and interviews with 2012 participants and five decades of alumni.
The data are presented in this chapter in the order that the constant comparative analysis of the data occurred. Therefore, a description from the documents of the overall structure of the Governor’s School curriculum is provided first, including sections on themes that emerged related to scheduling, faculty, curricular materials, and curricular theory. The next section provides an overview of additional data from other program documents that were carefully reviewed for triangulation, though not coded. Next, interviews with key administrators, curriculum reviewers, and instructors examine how these key leaders envisioned the curriculum and instructional approaches to determine if the documents reflected both the intent and vision of key individuals. Responses are not credited to individual interviewees in order to protect anonymity.

The remaining sections of the chapter are divided into Area I, Area II, and Area III classes, the three types of Governor’s School classes offered. The first classes discussed are the Area I content-specific classes on English, mathematics, natural sciences, and social science. The next two types of Governor’s School classes examined are Area II classes, interdisciplinary open discussions of concepts and issues, and Area III classes that focus on self-understanding. For each of the Area I, Area II, and Area III sections in this chapter, discussions are sequenced in the order that data sources were examined by the use of constant comparative analysis: document review, classroom observations, then student and alumni interviews.
Overall Program Document Review

An overview of the four major curriculum documents analyzed is provided in Table 4.1. The discussion that follows stems from the themes and codes that emerged from the content analysis of these four documents.

| TABLE 4.1 |
|-----------------|---------|--------|-------------------------------|------------------|
| NAME OF DOCUMENT | YEAR | AUTHOR | PURPOSE | NO. OF PAGES |
| The Governor’s School of North Carolina; Staff Report, 1963-1964-1965 | 1965 | Carter, C.D. | Report a description of the instructional programs in 1963-1964-1965 to the N.C. Governor’s School’s Board of Governors | 119 |
| Opening Windows Onto the Future: Theory of the Governor’s School of North Carolina | 1968 | Lewis, H.M. | Clarify the theoretical underpinnings of the Governor’s School curriculum. | 44 |
| The North Carolina Governor’s School Program Document | 2005 | Governor’s School West Faculty | Create a current statement for teachers, the Board of Governors, DPI, and other educators. | 26 |
| North Carolina Department of Public Instruction (n.d.). Exceptional Children Division: Governor’s School of North Carolina Website | n.d. | North Carolina Department of Public Instruction: Exceptional Children Division | Provide information about the Governor’s School of North Carolina to the general public, school personnel, parents, and students, including nomination packets and procedures. | 33 web pages |
The themes discussed are the structure of the curriculum and instructional approaches, faculty, curriculum materials, scheduling, and focus on contemporary theory. The discussion is intended to provide a deeper understanding of the Governor’s School’s curriculum and instructional program as it has evolved over fifty years.

**Structure of the curriculum and instructional approaches.** Three types of classes constituted the major instructional offerings at the Governor’s School of North Carolina. These were outlined in the first program document (Carter, 1965) in the following way:

- **Area I:** Special Aptitude Development
- **Area II:** General Conceptual Development
- **Area III:** Personal Development and Self-Insight (p. 15)

Area I classes were content area classes. This research examined the Area I content classes on English, Mathematics, Natural Sciences, and Social Science. Area II classes were comprised of students from all ten academic and artistic content areas represented in Area I classes. Area II classes sought to make interdisciplinary connections around contemporary issues. Area III classes were again comprised of students from all ten content areas, although students were not in Area III classes with the same students from their Area II classes. Area III classes were intended to help students link theory to practice and better understand the relationship between what they were learning and themselves. Originally in 1963, the first year of the program, the Governor’s School offered only Area I and Area II classes. However, after its first summer program, the instructional leaders of the Governor’s School recognized the need to develop “curricular provisions designed to promote self-insight and personal development in understanding oneself and one’s relation to society” (Carter, 1965,
As a result, Area III classes were added in 1964 and became a part of Governor’s School offerings for the next 49 years. The following findings reflect the ways in which these three types of classes were uniquely designed to address the needs of academically gifted secondary learners, and the benefits of the classes to participants.

Even in the earliest document of the Governor’s School (Carter, 1965), the structures and elements that made the curriculum of the program unique as “differential education for the gifted” (p. 17) were directly addressed. In an article published after the Governor’s School had been in operation for 13 years, Jim Bray (1976), Director of the Governor’s School at the time, described the unique nature of the curriculum in the following way.

The curriculum emphasizes theory, especially 20th century theory, and imaginative or inventive extrapolation into far-ranging field. The attempt is made to give the students, the future cultural leaders of the state and nation, an inspirational and curiosity-whetting peek into the latest accomplishments, problems, and theories in the various fields of the arts and sciences. (p. 17)

These distinctions were reiterated not only within the documents, but also within other data such as responses of students and alumni.

Because of the program’s emphasis on the latest theories and practices in each content area, the written curriculum for the Governor’s School’s content areas, Area I classes, provided guidelines and exemplary lesson plans, but not a written teaching guide. The choice of exactly what to teach was intended to allow instructors to address the most current theories, approaches, and understandings in each Area I content area. Therefore, by design, the content within the curriculum has changed each year. As one of the Governor’s School
Directors described, “We are asking everyone to teach the latest things, like the latest short story from *The New Yorker*. You don’t have a body of critical literature behind that.”

Instructors were expected to choose current issues that pull from their own areas of expertise.

To provide some degree of consistency in the choices that were made concerning the content, guiding questions were provided by *The North Carolina Governor’s School Program Document* (North Carolina Governor’s School, 2005) for an instructor’s preplanning process. The guiding questions that addressed Area I required that the course or topic accomplish three goals: “1) stimulate students to construct new paradigms – new mental models of reality, 2) encourage students to think critically, creatively, and openly, and 3) help students develop rigorous, thoughtful arguments, and become comfortable with ambiguity and nuance” (North Carolina Governor’s School, 2005, p. 14). These three goals aligned with the theoretical framework of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003), which was first proposed in 1986, 23 years after the Governor’s School of North Carolina was founded. The Integrated Curriculum Model was designed for developing and evaluating differentiated curriculum for academically gifted learners, and includes the following three dimensions: 1) “emphasizing advanced content knowledge that frames disciplines of study” (p. 7); 2) “providing higher order thinking and processing” (p. 8); and 3) “focusing learning experiences around major issues, themes, and ideas that define both real-world applications and theoretical modeling within and across areas of study” (p. 8). The three goals provided by the report for the guiding questions created a consistent structure for a curriculum that, of necessity, changed each year as it addressed current or “contemporary” theories in each of the content areas. *As The North Carolina Governor’s*
School Program Document (North Carolina Governor’s School, 2005) stated, “Governor’s School has never had standardized courses for each Area I discipline. Each Area I instructor is expected to create courses, either individually or with others in the discipline” (p. 19). As a result, the selection and quality of instructors for the Governor’s School has played a critical role in determining the effectiveness of the program.

**Faculty.** One of the key components to the effective implementation of the Governor’s School curriculum rests with the quality of the instructors. According to key program administrators, instructors have been recruited from university faculty and graduate students, public and private schools, and from former Governor’s School participants. In interviews, 2012 students and past alumni frequently referenced the expertise of their instructors in both teaching methodology and content knowledge. According to one of the curriculum reviewers who has been involved with the Governor’s School since its inception, “when you look at the faculty, what you’re getting is the top level of faculty. And that has the same influence as the top level of students, in the sense that there are a lot of very good teachers all over the state, but if I bring together the top 5% of that group, and turn them loose, then maybe that’s why we get the special thing that we’re describing. Qualitatively, I get the sense that that top level is different from the standard competent teacher.” With a program focused on current or “contemporary” theory and thought, the faculty had to be well-versed in the latest developments in their specific content areas.

While no written criteria have been developed for faculty selection, hiring decisions were made by administrators at the North Carolina Department of Public Instruction (NCDPI). The three key program administrators at NCDPI stated that instructors applied for
the positions and were selected each year, with only one administrative staff person being a year-round employee. As one of the program administrators described the traits that they looked for in candidates, “There’s not a single factor, but they have to be extremely knowledgeable in their area, beyond the norm, and they have to be extremely neutral about how they present that information. We have, if you’ll pardon the expression, very smart people, but they have to be very unbiased to teach the information in a Governor’s School.”

These general traits were in keeping with the recommendations of one of the original Governor’s School curriculum developers, Virgil Ward (1961): “teachers of intellectually superior children and youth should be among those of the greatest general excellence to be found in the profession” (p. 109).

The other two Department of Public Instruction program administrators added, “[The faculty] also need to understand that the students are experiencing something more than Area I [the content areas for which they were selected for the program]. The students are contributing to a greater community. It’s not science camp, math camp. It’s a bigger experience.” Another program administrator mentioned that it is important to understand what Governor’s School is not. “That’s one of the greatest misunderstandings about Governor’s School. It’s not an academic program. It’s a scholarly program, but not about math and English and science…. It’s about how math and English and dance are related.”

Therefore, the interdisciplinary approach to the overall Governor’s School curriculum has required more than content expertise. The two site directors echoed the need for faculty who understand the complexity of the curriculum and its structure. One described the kind of instructor selected by explaining, “We do emphasize contemporary ideas, which take
teachers out of their comfort zones. So these are people who are interested in engaging with gifted students.”

However, the difficulty of finding faculty who fit these descriptions was accentuated in the first three years of the program. In 1963 and 1964, the Area I instructors, who had expertise in their respective content areas, were asked to teach Area II courses. According to the program documents, most of the faculty members were not comfortable leading interdisciplinary discussions on issues and themes unrelated to their own content expertise. “It was found to be difficult during the sessions of 1963 and 1964 to recruit, from among the Area I staff, teachers …who felt comfortable or confident as a teacher of ‘essential ideas.’ Many felt ill at ease [teaching] outside of their ‘specialty’ and ill-qualified to teach ‘philosophy,’ as they dubbed it” (Carter, 1965, p. 98). As a result, by 1965, a separate group of instructors were employed to teach Area II and Area III classes. This change indicated the necessity and the difficulty of employing teachers with the training and dispositions to provide differentiated instruction for gifted learners that is interdisciplinary and issue-driven.

**Curriculum materials.** The selection of curriculum materials has always been the responsibility of the instructional staff. In the second major document of the Governor’s School (Lewis, 1968), questions were proposed to guide the selection and use of materials within the instructional program. These questions encouraged instructors to select materials that reflected the latest developments in the field, with an emphasis on theory, and that related to the overall view of the world in the 20th century. Changes in curriculum materials were made over time in order to address the focus of the Governor’s School curriculum on current content, issues, and theories.
**Scheduling.** Over the five decades of the program, changes have occurred in scheduling for both the overall program and the individual classes for a number of reasons. The length of the program has varied from five weeks to eight weeks, usually depending on funding and the availability of students as a result of the regular school calendars. The length of class sessions varied as well, from three hour classes to 75 minute classes. This last change resulted from the need to maintain intense concentration of students and the desire to provide a greater variety of offerings. For example, Area I classes, originally offered in three-hour segments, evolved to being offered as two 75-minute classes. One class was focused on a common experience for all students in that subject area, such as a biology class, while the second class session provided a variety of experiences, such as elective choices or research opportunities. This change indicated that, although academically gifted learners have a longer attention span than their age peers (Maker, 1982, b), three-hour classes were less productive; therefore, 75-minute class sessions provided for a higher degree of concentration and allowed for greater variety and choices in the topics and experiences. Sample daily schedules of classes are provided from each of the two campuses in Appendix I.

**Focus on contemporary theory.** From the beginning, the vision of the Governor’s School curriculum was heavily grounded in the latest theory within each content area. As the first program document stated, “not only must theory be emphasized, but it must be the theory which is revolutionizing thought in all realms of contemporary culture (Carter, 1965, p. 6). This same document justified the heavy emphasis on current theory by putting it into historical context of a post-Sputnik society.

Education in the United States, with popular emphasis on instrumentalism, seems to
have been (and still is) strongly oriented toward technology or practice, and to be comparatively weak in basic research or theory. . . . but Europe is still relied on heavily for theoreticians and theory. Since theory must precede practice, there is a need for emphasis on theory in the education of leaders. Hence, it follows that one distinctive characteristic of a differential education for the gifted should be an emphasis on theory rather than on facts and practical applications. (p. 5)

This first program report also offered another justification for this curricular emphasis on theory that goes beyond historical context. The report provided the argument that this emphasis addressed the characteristics that make academically gifted learners unique in comparison to other students of their age, experience, and environment.

The emphasis on theory seems to be justified further by some of the differential characteristics of gifted individuals. The more that is learned about the nature of intelligence and creativity, the more it appears that theoretical ability is the key factor in both. (pp. 6-7)

The focus on theory over a focus only on fact echoed the work of gifted educator Dr. Virgil Ward (1961), a professor at the University of Virginia who was involved at the inception of the Governor’s School by serving on the Advisory Board and by assisting in designing the curriculum. Dr. Ward’s principles for curriculum for academically gifted learners included an “emphasis upon intellectual activity” (p. 126) and upon “enduring methods and sources of learning, as opposed to a terminal emphasis upon present states of knowledge” (p. 156).

According to one of the former Governor’s School Directors, “Dr. Virgil Ward had the most profound hand in writing the original curriculum, even more than Michael Lewis.”
The emphasis on “contemporary theory” as defined by the Governor’s School documents was the single most consistent theme throughout the curriculum documents. *Opening Windows Onto the Future* (Lewis, 1968), the second major document of the Governor’s School, was devoted almost entirely to explaining and promoting a theoretical emphasis within each Area I (content area) class, and as the very purpose of Area II classes. The author summed up the aim of Governor’s School in two “doctrinal postulates: (1) that theory for interpreting facts be emphasized rather than mere facts, (2) that the theory emphasized should include the most up-to-date vanguard ideas that are stimulating innovational thinking in all areas of knowledge” (p. 14). The document stated that what the Governor’s School hoped “to develop and enhance [was a] pupil’s power to abstract, to conceptualize, to theorize” (p. 24). Although word count was not selected as a primary tool for analysis of the program documents, a word frequency count of the *Opening Windows Onto the Future* document indicated that the most frequently used word was “theory,” used 94 times, with the second most frequently used word being “new” and appearing 59 times. The emphasis on theory, therefore, is a consistent theme.

The third major document, the North Carolina Governor’s School Program Document (North Carolina Governor’s School, 2005), reiterated this theme in its description of each of the Area classes. For Area I, the content area classes, it stated that students “become acquainted with contemporary developments within their discipline and consider these developments at a complex and theoretical level” (p. 7). In Area II classes, comprised of students from multiple Area I disciplines, the document claimed that “students and teachers sharpen their critical thinking as they explore connections between and among the ideas and theories
central to Area I disciplines” (p. 7). In describing what happens in an Area II discussion-based class, the 2005 document stated that “as conceptual ideas and integrative concepts emerge, the class attempts to construct an understanding of contemporary ways of thinking and of the culture that arises from them” (p. 7). Even for the Area III interdisciplinary class description, the stated goal was “to ground what they are learning in their Area I and II classes in their own personal experience” (p. 7). The 2005 document explained the benefits of this emphasis on contemporary theory and thought.

The study of contemporary ideas has the effect of raising questions about basic assumptions of each discipline – exactly the kind of questioning which promotes creative solutions to long-standing problems. For students and teachers, it has a mind-expanding effect that far surpasses simply learning facts. (p. 8)

Benefits of this emphasis were further elaborated on as extending beyond a regular high school curriculum, drawing faculty and students into a “common circle of learners” (p. 8), increasing open-mindedness and acceptance of the process of change in a rapidly changing world, and creating “a self-cleaning institutional prompt” (p. 8) as a result of the need to recreate and re-evaluate what is taught every year in order to keep it current.

The most recent curricular description, the North Carolina Department of Public Instruction’s (n.d.) website for the Governor’s School as it was retrieved in August, 2012, reiterated this theme of contemporary theory and ideas. “The Governor’s School curricular emphasis on contemporary thought in each discipline has proved successful for over 40 years. This central aspect of the program is continually praised by educators, students, and alumni” (Curriculum section, para.5). It further described the curricular emphasis on
contemporary thought by claiming that “students encounter theories and concepts not typical of a high school curriculum and, in fact, often not encountered until graduate school” (Curriculum section, para. 5).

**Review of Other Program Documents.** Additional documents were carefully reviewed for the purpose of triangulation but not coded. These documents included a program document entitled *Opening Windows in Area I: A Self-Study, 1976* (Foy, 1976); a report entitled *The Future of the Governor’s School: Results of a Faculty and Alumni Discussion Group* (Gallagher, J., 1992, January); the *Curriculum Review 1996* (Foy, Caruso, Dusenbury, Hairston, Love, Milner, Sorkin, & Vorsteg, 1996) conducted by the faculty of Governor’s School West; and minutes from the meetings of the Governor’s School of North Carolina Board of Governors in 1994 – 1996 when the curriculum review was done. These documents provided evidence of a consistent vision for the curriculum and instructional approaches. For example, *The Future of the Governor’s School: Results of a Faculty and Alumni Discussion Group* (Gallagher, J., 1992, January), authored by gifted education expert Dr. Jim Gallagher, was a culmination of a discussion group led by Dr. Gallagher and involving five instructors and two alumni from each of the two Governor’s School campuses, Governor’s School East and Governor’s School West, for a total of 15 participants. In this report from the day-and-a-half meeting, the following six principles were agreed upon: “1) no grades, 2) theories and conceptual models, 3) up-to-date theories, 4) inspire creativity, 5) introduce serious problems, and 6) the interconnectedness of disciplines” (pp. 3-4). All six stated principles reflected those earlier articulated in the four major documents previously discussed. Furthermore, the report affirmed that the faculty and alumni discussion group
valued the original principles and wished to continue implementing the same program
design. Recommendations made by the discussion group pertained almost exclusively to the
decision-making structure of the Governor’s School, which the report addressed through an
organizational flowchart. In the appendix of the report are sample outcomes and activities
describing Area II and Area III.

Once again in 1996, the faculty affirmed the curricular structure and focus of the
Governor’s School. In the *Curriculum Review 1996* (Foy, Caruso, Dusenbury, Hairston,
Love, Milner, Sorkin, & Vorsteg, 1996), the following was stated:

The faculty wishes to strongly endorse the continued use of *Opening Windows Onto the
Future* as the official program document of the Governor’s School. We believe that it
has proven to be a highly successful model for 30 years at the Salem campus, inspiring
students, faculty, administrators, and educators from other states in ways not matched by
any other educational model. (p. 2)

In the minutes of the Board of Governors meetings from 1994-1996, during which time
this last curriculum review took place, concerns described under the heading of “curriculum”
merely involved increasing and decreasing the allocation of admission slots for specific Area
I classes to accommodate applicant interest, with some Board members believing that more
slots should be provided for social sciences or for foreign languages. The only concerns that
focused on the curricular principles involved controversy experienced by the Governor’s
School in Arkansas in 1995 over the nature of their curriculum being deemed too liberal.
The Arkansas program was modeled after the North Carolina program, so the Board of
Governors was made aware of the issue and discussed how they would respond if similar concerns were raised with the North Carolina curriculum.

With the exception of adding Area III classes in the second year of the program, the curriculum and instructional approaches of the Governor’s School have undergone only minor changes. In addition, multiple reviews by program administrators, instructors, alumni, and external experts have affirmed that the focus has been well-grounded and highly successful.

**Survey Data.** The North Carolina Governor’s School Foundation (2012) conducted an impact survey of Governor’s School alumni in February of 2012. There were 770 respondents. For the statement “GS had a positive influence on my life,” 99.4% (n=765) of respondents replied “Yes.” In responding to the statement “GS helped me get into college,” 94.7% (n=729) of alumni responded “Yes.” In 2009, the Governor’s School began charging tuition of $500 per student because of reductions in the General Assembly’s approved budget. For one question asked, “a $500 tuition would have kept me from attending,” 42.2% (n=326) of respondents replied “Yes.”

**Interviews with Key Administrators, Curriculum Reviewers, and Instructors**

To protect the anonymity of the individuals interviewed, these interviews are reported collectively. Included in the interviews were two site directors, three administrators from the North Carolina Department of Public Instruction, one former Chair of the Board of Governors, an individual who has twice conducted curriculum reviews of the Governor’s School curriculum in 1966 and in 1995, a President of the Governor’s School Alumni Association, and two Area I instructors in English and natural sciences. All interviews were
conducted individually, with the exception of the interview with all three administrators from the Department of Public Instruction. Some of the insights from these interviews with key leaders are reflected within relevant areas of this chapter. However, more global program insights are discussed in this section.

Although the Department of Public Instruction and the Board of Governors provided oversight of the instructional program, the Governor’s School site directors on each of the two campuses were authorized to make the major decisions concerning the curriculum and its implementation, according to one of the Department of Public Instruction administrators. This individual added, “The on-site directors are the primary ones responsible for training the faculty and staff.” One of the faculty members interviewed confirmed that she was not provided a written curriculum. Instead, her lesson plans were developed with the guidance of the Area I coordinator in her content area. According to the program directors interviewed, each campus had an Area I coordinator for each subject area (such as English or math), and Area II and Area III coordinators as well. These coordinators served in a capacity similar to a lead teacher, based on the description provided by one of the instructors, and ensured quality and consistency in the planning and instruction within their respective classes. The three program administrators interviewed stated that the instructional faculty members met each summer during the week preceding the beginning of a Governor’s School session to plan and coordinate their instruction.

The two instructors interviewed described helpful, collaborative experiences in planning their instruction with the other faculty members. They also reported that there is a strong sense of institutional history that is passed on within the faculty which maintains a
consistency in the curricular focus and instructional approaches. In describing her process of evolving her own Area I curriculum, one instructor in Area I natural sciences explained, “I found the most compelling subject matter. I knew if I was passionate about it, I would do a good job of teaching. I took the content that would build critical thinking skills and I wove them together into a story.’” This instructor recounted that she had been a Governor’s School participant herself in high school, so she was familiar with the overall philosophy and structure of the program.

In describing the distinctive nature of the Governor’s School curriculum, the curriculum reviewer offered the following insights: “What comes to mind is that they had a different approach. It wasn’t just more sophisticated content. It was their emphasis on self-understanding and thinking about themselves and what they are doing and where they are going. There were some courses that were unique in that sense, and allowed them to explore. They had never had a chance to do that back home.” Key administrators from the Department of Public Instruction discussed the non-graded nature, the interdisciplinary approaches, and the openness of the curriculum, “openness to a variety of thoughts, attitudes, approaches, personalities. When you think of curriculum, you usually think of a set list of learning goals, or skills, or knowledge that folks are going to achieve or attain. That’s usually what we see in a curriculum….It’s different…. So there are things we want kids to achieve, but we don’t necessarily put a hard measure on [the outcomes].” Both the former Chair of the Board of Governors and the DPI administrators mentioned advanced content. The Chair remarked, “It goes beyond the regular curriculum. It is advanced curriculum that that age would not see until college level.”
These key leaders from over the fifty years of the Governor’s School provided a consistent depiction of the core principles of the curriculum and instructional approaches. This consistency is unusual given the autonomy of the site directors and Area I coordinators, and even the individual instructors, to create appropriate curriculum each summer. Necessitated by the goal of addressing the most current issues and theories, the Governor’s School relied on the selection of faculty who are both content area experts and master teachers, and on the informal communication of the institutional history that shaped the curriculum and instructional approaches for 50 years. While the key leaders provided evidence of the successful fulfillment of the program’s goals and intent, the lack of written curricular documents which describe more specifically the instructional experiences in the classroom make the Governor’s School’s curriculum and instructional approaches more difficult to replicate. Therefore, this research has attempted to document those approaches and glean which of those approaches are beneficial to participants.

**Area I Curriculum and Instructional Approaches**

This section of the chapter presents the findings related to Area I curriculum and instructional approaches as described in the four major documents, implemented in the classroom as captured by observations, and experienced and reported through interviews with 2012 students and five decades of alumni. Because two of the major program documents provide only general descriptions of Area I classes without reference to content areas, discussion of the data from those documents is provided first. Then, Area I content area classes are discussed in the following order: English, mathematics, natural sciences, and social science. Within each discussion, data is presented from two documents in
chronological order, from classroom observations, and then from interviews with participants. Particular attention is paid to examining how the curriculum in each content area addresses the distinct characteristics of academically gifted learners, such as the “ability to handle abstractions, the power of concentration, and ability to make connections and establish relationships among disparate data” (VanTassel-Baska, 1989, p. 13), and how the curriculum aligns with the theoretical framework of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003).

**Program Document Review: Two Primary Documents.** Two of the primary documents examined, *Opening Windows Onto the Future* (Lewis, 1968) and *The North Carolina Governor’s School Program Document, 2005* (North Carolina Governor’s School) provide general descriptions of Area I classes without specifying the content areas. Therefore, they will be discussed first.

*Opening Windows Onto the Future, 1968.* In the second major Governor’s School curricular publication, *Opening Windows Onto the Future* (Lewis, 1968), only general descriptions of the philosophy of the overall Area I curricula were provided. The author described Area I classes as taking two-thirds of a pupil’s class time. Because this document came only three years after the Staff Report (Carter, 1965), it did not seek to duplicate that report, but rather to supplement the descriptions of curriculum. Therefore, no section was dedicated to the description of each of the Area I content areas.

*The North Carolina Governor’s School Program Document, 2005.* By 2005, a document, *The North Carolina Governor’s School Program Document, 2005* (North Carolina Governor’s School) was developed by Governor’s School West to describe the
curriculum and its changes over time, particularly since the development forty years earlier of *Opening Windows Onto the Future* (Lewis, 1968). According to one of the Site Directors, the authors “wrote the 2005 document with an eye on tutorial.” A preplanning guide for developing Area I goals and objectives was provided, although the sample context lesson for an Area I class was only in the area of instrumental music. In this 2005 document, Area I content area classes were described overall by stating that “the emphasis in every Area I discipline is on exploring concepts and ideas – specifically those in the forefront of each discipline – rather than on skills training” (North Carolina Governor’s School, 2005, p.7). This focus remained consistent from the 1965 program report through the observations of the 2012 classes. The 2005 document even accentuated the rationale for this emphasis for academically gifted learners:

> The perceived needs that Governor’s School attempts to fill – challenging students with the most pressing questions of the day in their respective disciplines – are still very much present, and the time lag between today’s critical issues and high school curricula continues to grow. (North Carolina Governor’s School, 2005, p. 9)

**Area I English curriculum and instructional approaches.** The Area I English curriculum and instructional approaches were examined through the program documents, a classroom observation in the summer of 2012 in an Area I English class, and interviews with five alumni whose experiences span from the first year of the program, 1963, through 2004. The descriptions of Area I English classes in the written documents focused on abstract concepts and theory and were consistent with the implemented curriculum as documented through observations and alumni interviews. Data from all sources indicated that the Area I
English classes offered a challenging experience, even for students who perceived that their regular high schools provided quality English instruction.

**Document review of written curricular documents related to Area I English.**

*The Governor’s School Staff Report, 1965.* The first official Governor’s School document, the Governor’s School Staff Report (Carter, 1965), emphasized the need to focus on how material was taught, not just what was taught. For example, instructors juxtaposed the study of Homer with Giraudoux, and Milton with Salinger, rather than studying a body of literature within one time period as was more traditional. Students were asked to evaluate the “eternal truths” (p. 17) in a work by examining these works through various theories of criticism. Another aspect of the early English curriculum was the “study of language using the modern concepts of structural or scientific linguistics” (p. 18). Students used this “modern scientific approach to the English language, emphasizing sound and structure” (p. 20) to examine not only the language structure within the written text, but also the structure of their own language and that of their peers. “The English curriculum at the Governor’s School translates into its more specific area the general theory of differential education for the gifted – that the level of instruction and learning be more generically theoretical than is appropriate for the generality of high school students (not including those participating in local programs for the gifted)” (p. 17). Thus, the emphasis on advanced content and theory was designed to address the needs of academically gifted learners as compared to the needs of their age peers.

In the first year of the program, four sections or groups of English were created, and students chose one section in which to work for the entirety of the program. These sections
included one creative writing section and three thematic literary studies sections (the tragedy of man, comic spirit, and fall from innocence). By the third year of the program, this organizational approach was determined to be forced and artificial because students chose groups based on social reasons rather than academic interests, creating an imbalance in both numbers and diversity of backgrounds within the groups. Therefore, Governor’s School administrators reorganized the English course offerings and divided the students into more balanced groups based on gender, geographic distribution, and size of the students’ home schools. Rather than having a separate course on creative writing, each section infused creative writing into its study of literature. The change was deemed successful by the program leaders. While choice is frequently advocated as an important element of differentiated instruction for academically gifted learners, the Governor’s School determined that it is important to ensure that the choices are authentic and reflect individual interests in the subject matter.

Also added to the Area I English instruction in 1965 were visits by published writers who read their own work and coached students individually in writing. Two of those writers were former Governor’s School students. By 1964, students in the English classes had begun publishing their own literary magazine of their original works to model the thinking of professional writers and create a higher order product.

North Carolina Department of Public Instruction website. The North Carolina Department of Public Instruction’s (n.d.) website for the Governor’s School, as retrieved in August, 2012, included a brief description of each type of Governor’s School course, as well as sample course descriptions for each Area I content area from each of the two campuses of
the Governor’s School. The site described the English curriculum as focusing on modern and postmodern poetry, fiction, and drama. The Governor’s School East course description articulated the goals for their Area I English classes, which included “to acquaint our students with works in poetry and fiction that they will not be exposed to during their tenure at their high schools back home; to provide a learning atmosphere that encourages critical thinking as the students encounter these new poems, short stories and novels”; and “to promote an understanding of how the themes and situations in the poems and short stories and novels which they read have interdisciplinary connections” (North Carolina Department of Public Instruction’s, n.d., English Section, para. 1). These stated goals of the Area I English classes reflected the three dimensions of the theoretical framework, the Integrated Curriculum Model (VanTassel-Baska & Little, 2003): 1) advanced content knowledge that frames disciplines of study, 2) higher order thinking and processing, and 3) major themes, issues and ideas of disciplines as the organizing construct for making interdisciplinary connections.

The website offered a description of three Area I English courses for each of the two Governor’s School campuses. At Governor’s School West, Contemporary American Short Fiction, Documentary Fiction, and Twentieth-Century Poetry were offered. According to the website, in each class, students analyzed works and applied literary criticism and analysis. Products from the courses included ethnographies, audio documentaries, and multimedia collaborative projects, as well as original short stories and poetry. On the other hand, Governor’s School West offered a different three courses: Postmodern Literary Expressions, Best American Short Stories and Essays, and Film Adaptations of Literary
Texts. On both campuses, the Area I English courses offer topics that are not traditionally explored in the regular secondary English curriculum.

**Classroom observation of Area I English.** To get a firsthand view of the implementation of the Area I English curriculum, a classroom observation was conducted on one of the Governor’s School campuses in the summer of 2012 as part of a pilot study during the fourth week of the five-week program. Data were archived for use in this study. The observation lasted through the entirety of the scheduled class, 75 minutes. Tables and chairs were arranged in a large rectangular shape so that students and the instructor could see each other. Thirteen students were present, eight females and five males. One male student was African American, and all other students appeared to be White. The teaching assistant also sat at the table, but did not participate. The instructor began the class promptly with a discussion of the logistics of upcoming events, including a trip to the other Governor’s School campus that weekend, and a trip to the Duke University rare books collection on the following day. Students were scheduled to meet with the director of the rare books collection who would show them a graphic novel from the 1800’s, as well as examples of old manuscripts so that they could “see the relationship of images to text.” The instructor informed them that they would see a *Superman I* in the rare books collection. He reminded them not to get so carried away with the collection that they did not focus on the talk given by the director, as had happened in previous years.

Students were then asked to engage in a “fishbowl” in which half of the class (numbered off by 1’s and 2’s) conducted a discussion for 10 minutes about the section of their outside reading of *V for Vendetta*, a graphic novel, while the other half listened quietly and took
notes. At the end of 10 minutes, the first group listened while the second group picked up the discussion. Students began with noticing patterns that might be meaningful and noted the frequent references in the text or graphics, sometimes subtle, to Shakespeare’s characters or writings. Questions asked and discussed by students in the two fishbowl groups included “what do you think this says about the way society is acting, concerning different sexual inclinations, now?” and “why do you think he chose cyanide for the priest? It’s pretty fast.” There was significant evidence of higher level thinking processes both in the questions posed by students and in the answers.

The instructor then said that there were some bigger questions that had been raised that they all needed to discuss together. He asked if they thought that V was a vigilante. In response, students pointed out that he had not killed innocent people yet in the book, to which another student asked, “Just because they are not innocent, does that make it okay?” One of the boys quipped, “That’s an Area II question. I don’t want that in here!” Students were obviously aware that deep, complex issues were a key component of the Area II instruction. After more discussion, the instructor asked how many had discussed Plato’s allegory of the cave in their Area II classes. A few students raised their hands. He requested one student to give a summary, which she did. He then inquired about the name of the place where the characters lived and helped the students make a connection between the allegory’s shadows and Shadowland, a place in the text. The use of readings and discussions from Area II classes within an Area I class indicates the instructor’s awareness of the whole curriculum and his openness to making interdisciplinary connections appropriate to academically gifted learners. The Integrated Curriculum Model for differentiating
instruction for academically gifted learners describes such connections within its third dimension as “major themes, issues, and ideas of disciplines as the organizing construct for making interdisciplinary connections” (VanTassel-Baska & Little, 2003, p. 8).

The instructor followed up on several questions that students had raised in the fishbowl discussions, such as why the chapter was named “versions.” He inquired about why they thought that the main character was infatuated with the computer. Their responses related to themes of power and control. He then asked what the character’s concept of justice seemed to be, and what kind of government was being represented? One student responded “fascism.” A discussion ensued concerning what evidence from both the text and the graphics could support that conclusion. The instructor built the discussion from the more concrete facts portrayed in the text and graphics to more abstract concepts, such as power and justice, thus addressing the need of gifted learners to think more abstractly (VanTassel-Baska, 1989).

The instructor redirected their focus to creative writing about villains. Students first brainstormed a list of villains whose names they recognized. They included Darth Vader, Jafar, Ursula, Scar, Bowser, Harley Quinn, Cruella DeVil, Dracula, Fish, and more. Then the instructor asked each student to choose one villain and write a brief story from that villain’s point of view about why that individual should not be conceptualized as a villain. “So you get to rehabilitate a villain of your choice.” Students talked through possibilities for about eight minutes with each other before falling silent and writing. No one asked for silence, but they all just settled quietly into their writing for about 14 minutes. The eight minutes of
discussion allowed them to explore possibilities aloud before writing. Talking was not discouraged.

Following the writing, each student read aloud his or her opening sentence. The instructor then drew parallels between that exercise and the writers who created *Wicked* and *Shrek*, both of which explored a villain’s backstory. In closing, the instructor reminded them of the next section of outside reading. Throughout the class period, the instructor allowed the students to lead the discussion, but occasionally provided questions to ensure that the students were thinking deeply and critically. The writing exercise related to the discussion of the villains in the graphic novel and modeled the processes of professional writers who have crafted similar backstories for other known villains. Students remained highly engaged through both the discussion and the writing.

**Area I English alumni interviews.**

Interviews were conducted with five alumni who attended Governor’s School as Area I English students. These interviews were intended to document more thoroughly how the curriculum was perceived and what benefits were gained. The five alumni spanned in years of participation from 1963, the first year of the program, to 2004, with three having attended the Governor’s School-East campus and two having attended the Governor’s School-West campus. Four of the alumni were selected using maximum variation sampling from the list of English alumni maintained by the Governor’s School Foundation as described in Chapter 3. The fifth interview was secured from a random encounter in a professional setting. Further descriptive data on the interviewees from Area I English are provided in Table 4.2.
Table 4.2

*Area I English Alumni Interviewed*

<table>
<thead>
<tr>
<th>Area I</th>
<th>YEAR</th>
<th>Pseudonym</th>
<th>Race/Ethnicity+</th>
<th>Sex</th>
<th>Urb/Sub/Rur</th>
<th>Region</th>
<th>HS Size</th>
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<tbody>
<tr>
<td>English</td>
<td>1963</td>
<td>DeeDee</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>S</td>
</tr>
<tr>
<td>English</td>
<td>1966</td>
<td>Tucker</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>English</td>
<td>1984</td>
<td>Mary</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>English</td>
<td>2001</td>
<td>David</td>
<td>AA</td>
<td>M</td>
<td>Urban</td>
<td>Piedmont</td>
<td>L</td>
</tr>
<tr>
<td>English</td>
<td>2004</td>
<td>Vivian</td>
<td>AA</td>
<td>F</td>
<td>Rural</td>
<td>Coastal</td>
<td>S</td>
</tr>
</tbody>
</table>

Note. Year indicates the year attended GS; W = White; AfAmer = African American; + indicates that ethnicity was self-reported; S=Sex; F=Female; M=Male; High school size was determined by the size of the high school’s junior class 2011-2012 according to [http://www.ncpublicschools.org/fbs/accounting/data/](http://www.ncpublicschools.org/fbs/accounting/data/); S=Small (< 100); M = Medium (100-300); L= Large( > 300).

Because the seven English students in the 2012 Governor’s School program who had been randomly selected did not return their requests for consent, no English students participated in the pilot study; therefore, only former alumni were interviewed in English.

When asked to describe her memories of Area I English, DeeDee, who participated fifty years ago in the first year of Governor’s School, remembered being challenged with both the readings and the writing. “*Paradise Lost* was of course much more advanced….We had papers to write, and it was my first time writing a paper for an English class. I was from a small school, and my impression of writing a paper was to give a synopsis of a book.” The writing that DeeDee recalled producing for her Area I English class required more critical analysis. She recalled attending several kinds of Area I classes, one being entitled “The Fall
of the Innocence,” and remembered this class being a discussion class, not a lecture class like was offered at her high school. “I do remember that the class was in a circle. That was the first time I had ever sat in a circle for a class,” recalled DeeDee.

Tucker, who participated three years later in 1966, shared similar memories of Governor’s School being different from her high school English classes. “There was something different that they did with us. It was not just literature, but it was humanities. I remember that it was not the ‘read the literature, subject yourself to tests on important points.’ The instructor just had lots of different ways to get us to look at themes and, I don’t know if he used the Socratic method, but it was the first time I had seen it.”

By Mary’s year of the program, 1984, topics in Area I English instruction included Southern writers like Eudora Welty, the Southern grotesque, and Japanese fiction, as well as Mary’s choice of creative writing in poetry. Saturday classes provided additional workshops in specific topics like humor or script writing. According to Mary, her experiences in high school English classes had been better than the norm; yet, the Governor’s School curriculum provided a challenge through advanced content. “In my high school, the English teacher I had… was a fantastic high school English teacher. In junior year, we were writing a paper at least every two weeks….However, you did no poetry, no Shakespearean plays; it was more analytical writing. But at Governor’s School, it was an intensive study on a subject matter that was not offered at my high school, and more creative writing than I would have done in high school.”

Vivian recalled the level of challenge being overwhelming for her in 2004. Her high school was rural and small, with only 89 in her class, and she recounted that her high school
experiences had not been as challenging. She was most impressed with the way that the writing instructor allowed students to move about campus for inspiration, and sit in beanbags within the classroom to discuss them. She was also impressed with the level of writing of her peers. “I remember in particular some of the poetry people wrote just blew me away.” However, as an African American student, she struggled with finding peers with whom to relate.

Whereas Vivian’s experience overwhelmed her, David, also an African American, found the challenge in 2001 of the Area I English curriculum exhilarating. Having come from an urban high school with a vast number of Advanced Placement courses offered, he remembered thriving on the challenge of the curriculum at Governor’s School. Of particular interest to him was the diversity of writers to which he was exposed, especially the poetry and writings of Sherman Alexie, a contemporary Native American writer. He recalled being asked to read specific works, to select other works from the college library that emulated the style and themes of the original works, then to create his own writings that mimicked that style. He also described the emphasis on contemporary theory. “In the Area I class, we did literary criticism theory. We talked about what a Freudian perspective is, what a Marxist perspective is, a feminist perspective. Then we did a role play, where we invited students from other areas to watch us perform. We dressed as our theorist; I dressed as Freud. One of my friends had to be the feminist perspective, and she dressed as Rosie the Riveter.” As a secondary English teacher, David has displayed quotations from his Governor’s School experience around his classroom. Having begun a college program with a double major in mechanical engineering and the humanities then switching to English, David credits his
experience in Area I English at Governor’s School with shaping his career choice. The emphasis on theory, themes, and issues, as described in the Integrated Curriculum Model (VanTassel-Baska & Little, 2003), and the exposure to contemporary writers from diverse populations created lasting benefits for him. In a later section of this chapter, the insights that Vivian and David offered on the impact that their Governor’s School experiences had on their racial identity are discussed.

**Summary.** All alumni interviewed described the Area I English curriculum at Governor’s School as challenging in the level and diversity of literature studied, in the expectations for the writing, and in the instructional approaches that focused on theory and more abstract concepts. Comparing the Governor’s School experience with their own high school English instruction, all reported that the Area I English classes were more challenging and exposed them to concepts and materials that were new to them, even those coming from high schools that they saw as providing high quality instruction. Consistent descriptions were given of the classrooms being arranged in an informal manner, in a circular fashion or, as Vivian reported, in beanbags. For DeeDee and Tucker, who attended in 1963 and 1966 respectively, this arrangement provided a significant benefit to the instructional experience by encouraging more open exchange and trusting dialogue. In the classroom observation, the rectangular arrangement provided this benefit to students and the instructor. Descriptions of Area I English in the first program document (Carter, 1965), with an emphasis on both theory and the integration of writing into the study of literature rather than as a separate subject, were reflected in data from the classroom observations and from alumni interviews.
Area I mathematics curriculum and instructional approaches. The Area I mathematics curriculum and instructional approaches were examined through two of the program documents, a classroom observation in the summer of 2012 in an Area I mathematics class, and interviews with seven 2012 students and alumni who attended Governor’s School from 1985 to 2012. The descriptions in the written documents of Area I mathematics classes indicated a focus on advanced content and the development of higher order, abstract thinking. The goals articulated in the written descriptions were consistent with the implemented curriculum as documented through observations and interviews. Data indicated that the Area I mathematics classes offered a challenging experience that required students to wrestle with abstract reasoning.

Document review of written curricular documents related to Area I Mathematics.

The Governor’s School Staff Report, 1965. In the Governor’s School Report of 1965 (Carter), a description was given of the teaching of mathematics in the public schools as being focused on mathematical understandings from the 18th century and simple processes of working with numbers. Evidence was presented from comments of Governor’s School students at the beginning of their 1965 experience, comments that characterized math as “a science which deals with numbers” (p. 39). To address these outdated conceptualizations of mathematics, the Governor’s School from its inception was “designed to emphasize underlying, unifying theories and mathematical concepts rather than the particular methodology or techniques of a certain branch of mathematics” (p. 39). Examples of this approach have included “the emphasis on the structure of sets, resulting in such relatively modern concepts as fields, groups, and finite geometries” (p. 39). In the 1965 report, the
need for the future of mathematics was described as being “for theorists: those who can go beyond mere manipulation of abstract entities to the conception of abstract relationship among those entities” (p. 39). Additionally, to provide justification for this emphasis on theory with academically gifted learners, the document stated ”the degree to which the curriculum emphasizes the abstract concepts of mathematics makes it thus inappropriate for the generality of high schools students, and appropriate in a program of differential education for the gifted” (p. 40).

Within the framework of a focus on theory, the Area I math curriculum outlined student objectives that included “a proper conceptualization of the uniformity of the structure of mathematics; an understanding of some of the men, methods, and events which led to discoveries [in] the development of mathematics;” and “a more creative process of mathematical thought” (p. 40). These objectives reflect the dimensions of the theoretical framework of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003): a focus on concepts and ideas, advanced content, and higher levels of thinking. They also expressed a desire that students understand both the historical and the groundbreaking contributions of mathematics and examine how mathematicians have constructed concepts in the past in order to emulate expert thinking in their own mathematical processes.

In 1963, the first year of the program, “the emphasis was on developing the students’ appreciation and understanding of deductive mathematical systems” (Carter, 1965, p. 41). Students moved from studying sets to examining the logical concepts underlying proofs and mathematical systems. Products of their thinking included probable theorems in mathematical systems, structured approaches to solutions, and creative mathematical puzzles.
Each student independently investigated some problematic area of mathematics. The second year, 1964, reflected few changes to the curriculum. However, similar to the Area I English courses, lecturers were added, and included pure and applied mathematicians who discussed their work with students. In 1965, the third year of the program, the emphasis on concepts of mathematical structure and proof remained the same, but students also developed original theorems and wrote independent research papers related to some area of mathematics. In its first three years of implementation, the Area I mathematics curriculum was heavily focused on students’ developing their abstract reasoning and creating original products, both aspects of the ICM’s dimension on higher order processes and products. Although advanced content was incorporated, the Area I mathematics curriculum was not intended to be a program of acceleration in mathematics, the more traditional focus of many curriculum opportunities in mathematics for academically gifted learners. Instead, the dispositions and habits of mind of mathematicians were modeled by engaging students in the creative practice of theorem development and providing career mathematicians as guest lecturers.

North Carolina Department of Public Instruction website. On the North Carolina Department of Public Instruction’s (n.d.) website, a description of the mathematics curriculum is offered, as well as sample lessons from one of the two campuses. The following three fundamental questions are posed as the focus of the Area I math curriculum: 1) “how does one ‘know’ mathematics,” 2) “what components comprise a mathematical structure or system,” and 3) “how is the beauty and abstraction of mathematics balanced with the world's need (desire) to apply it” (Mathematics Sample Course Description, para. 1). According to the website description, each student took four three-week courses. A sample
list and description of courses was provided, and included 1) Knot Theory, 2) Group Theory, 3) Non-Euclidean Geometry, 4) Discrete Dynamical Systems, and 5) Number Theory.

Instructional goals were also outlined for the mathematics curriculum on that campus. The goals specified that the Area I mathematics classes will “expose students to some of the many, different areas of modern mathematical thought” and “go beyond those areas typically covered in a standard high school curriculum” (North Carolina Department of Public Instruction’s (n.d.), Mathematics Sample Course Description, para.2). Other goals included to ensure that students understand the nature of mathematical systems and “introduce students to various forms of proof in different mathematical contexts” (Mathematics Sample Course Description, para.2).

From the first document in 1965 which described the classes in their first three years of implementation to the website descriptions retrieved in 2013, the focus of the Area I mathematics curriculum remained on developing mathematical thinking and reasoning, exposing students to new and current concepts in mathematics, and modeling the authentic practices of professional mathematicians.

Classroom observation of Area I mathematics. In order to document how the written curriculum is lived out as instruction, a classroom observation was conducted as part of a pilot study on one campus in the summer of 2012 during the fourth week of the five-week program. Data were gathered using a digital audio recording device, as well as notes typed on a laptop computer. The observation lasted the full length of the class period, 75 minutes. Data from this observation were archived from the pilot study for use in this research study.
All students had arrived by five minutes before the class began, and were seated in two rows facing the front of the classroom. Of the nine male and eight female students present, four of the female students were African American, and all other students appeared to be White. The instructor stood at the front of the class and used the whiteboard. Initial discussion concerned behavior exhibited by the student body on the previous night after a convocation speaker’s presentation. Some students had asked too many questions and for too long a period of time, so all students were reminded to keep their questions relevant to the audience. The instructor discussed the Governor’s School’s approach to inclusive problem solving, and suggested that students seek the director if they have any concerns. This discussion lasted 23 minutes. The instructor offered to leave his journal in his box for any student to write an entry in it— a concern, a compliment, a question. Then he discussed the Saturday schedule during which students were to visit the other Governor’s School campus. The instructor reminded this class that they must pick a session to attend on Saturday based on their interests. The classes that they would attend would be taught by the instructors from the other campus. When asked, the instructor said that he would choose “combinatorics,” a form of counting in multiple ways based on the number of permutations, because that was his weakest subject. Even though this segment of the classroom observation was not focused on mathematics, it provided insights into the inquisitive nature of Governor’s School students whose behavioral issues on the previous evening constituted asking too many questions of the speaker, the enhancement of the instruction through field trips that allowed students exposure to further topics, and the openness of the instructor to admitting that there were areas of mathematics about which he knew little and still wanted to know.
After this discussion, the instructor began the math instruction by saying, “I think we ended with alpha + zero = alpha = zero + alpha. This is the theorem then. It is really proving that zero + any number is actually that number. The reason you have to write it both ways is that addition is not commutative. 1 + omega. Let’s divide the room. Left side would do 1 + omega, and the right side would do omega + 1. And you’d get a different answer. So you all give it a try.”

Students did not have textbooks, but instead wrote in notebooks concerning their work and reflections. After they had worked for a while individually without collaborating, the instructor asked students if anyone had gotten an answer. An African American female responded, and he asked her to copy her work onto the board. Many students struggled, and no student had easy, automatic answers. Every indication was that the material was new and challenging to students. To clarify, the instructor used an analogy. “Let me give you another analogy to what is really going on in both cases. This was first expressed by a guy named David Hilbert. He did his work in the late 1800’s and beginning of the 1900’s. He contributed to every field of mathematics.” A male student asked if this was the same Hilbert as the “Hilbert space.” The instructor affirmed this point by explaining the analogy of the Hilbert Hotel. “That’s Hilbert. So consider a hotel that everybody calls the Hilbert Hotel. Every integer has a room. And let’s suppose that one night all the rooms are filled, but we have one new guest who really wants to stay in our hotel, and we’d like to give them a room.

0 1 2 3 4 5 6 7 8 9 10
So here is the question: Can we fit this guest in the hotel when all the rooms are full and nobody wants to stay with a stranger?” The students then proceeded to discover what happens when infinity is considered, allowing for no limit of the numbers, or in this case, rooms. The instructor demonstrated this concept on the whiteboard, then asked students to elaborate, sometimes orally and sometimes using the whiteboard. Of the 17 students present, six participated vocally in the class discussion, but all students appeared engaged, taking notes in their notebooks and listening attentively to both the instructor and other students. Students appeared reticent to volunteer, and answered quietly and timidly. Little time was spent in student-to-student discussion.

This observation provided some insights into how the curriculum was implemented in Area I mathematics. Advanced, abstract content was presented in ways that challenged and engaged these academically gifted learners. The instructional approaches addressed the original intent of the curriculum as stated in the 1965 (Carter) document, to develop “the students’ appreciation and understanding of deductive mathematical systems” (p. 41). Likewise, the goals described on the Governor’s School website were fulfilled. These included the goal of exposing “students to some of the many, different areas of modern mathematical thought” and going “beyond those areas typically covered in a standard high school curriculum” (North Carolina Department of Public Instruction’s (n.d.), Mathematics Sample Course Description, para.2). However, students did not work with each other in their problem solving. Such collaborative learning might have enhanced their higher order processes by requiring them to defend their reasoning to another student and listen to the reasoning of others.
**Area I mathematics student and alumni interviews.** To gain a more thorough understanding of how the curriculum and instructional approaches were experienced by participants and the benefits that these approaches provided, seven interviews were conducted with participants from Area I mathematics, four with students in the summer of 2012 during their Governor’s School experience and three with alumni who had attended Governor's School between 1985 and 2004. The alumni interviewed had attended the Governor’s School on two different campuses. These interviews provided insights into the consistency of the instructional offerings over time, the perceived differences between the Governor’s School’s instruction and the regular high school experiences of participants, and the benefits of the curriculum and instruction to participants. Descriptive data on the students and alumni interviewed who had attended in Area I mathematics are provided in Table 4.3.
Table 4.3

Area I Mathematics Students and Alumni Interviewed

<table>
<thead>
<tr>
<th>Area I</th>
<th>YEAR</th>
<th>Pseudonym</th>
<th>Race/ Ethnicity+</th>
<th>Sex</th>
<th>Urb/Sub/Rur</th>
<th>Region</th>
<th>HS Size</th>
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<td>W</td>
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<td>Rural</td>
<td>Piedmont</td>
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<td>F</td>
<td>Rural</td>
<td>Mountain</td>
<td>S</td>
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<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Mountain</td>
<td>M</td>
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<td>F</td>
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<td>Mountain</td>
<td>M</td>
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<td>F</td>
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<td>L</td>
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<td>AS</td>
<td>F</td>
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<td>Coastal</td>
<td>S</td>
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<td>Math</td>
<td>2012</td>
<td>Vanessa</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Coastal</td>
<td>S</td>
</tr>
</tbody>
</table>

Note. Year indicates the year attended GS; W = White; AS = Asian American; + indicates ethnicity was self-reported; S=Sex; F=Female; M=Male; High school size was determined by the size of the high school’s junior class 2011-2012 according to http://www.ncpublicschools.org/fbs/accounting/data1/; S=Small (< 100); M = Medium (100-300); L= Large( > 300).

While the Governor’s School’s Area I mathematics curriculum does not purport to accelerate mathematics instruction in order to get mastery of facts, it does provide advanced curriculum that centers on abstract reasoning, as described in both the 1965 (Carter) document and the Governor’s School website. The feeling of being overwhelmed by the advanced content in the mathematics classes was an experience shared by both alumni and students. For example, when asked to describe her 1985 experience at Governor’s School, Elizabeth described two Area I classes on logic and linear programming. “I remember being frustrated because you [were] in a setting with your equals or people smarter than you are. I remember it being challenging, but the teacher being supportive and everyone wanting to
help each other try to figure out what the logic was.” She recounted the Governor’s School math instruction being much more abstract and open-ended than her rural high school math classes. “My high school [experience] had been a teacher saying, ‘This is the one answer and this is how you get it.’ But my own personal learning had been, ‘No, you can get it another way.’ [In high school,] you have to learn how the teacher wants it and give that. But at Governor’s School, it was about, ‘How can you get an answer and how did you get it?’”

Because academically gifted students are unaccustomed to being challenged in their areas of strength such as mathematics, many described the effect that this challenge had on their self-understanding. For example, Samantha, who attended in 1986 from a rural area in the mountain region of North Carolina, felt ill-prepared for the challenge of Governor’s School. “I remember that we had to work on our own, and it was difficult, and maybe I shouldn’t have been there. I think I had the ability, but I doubted myself. That wasn’t something I was used to, that type of environment.” Likewise, Sarah expressed that the advanced content and higher order, abstract thinking were difficult for her in 2004. “I often felt like I was fighting to keep up with the information. I was asked to think in ways that I had never been asked to think before. I remember working with my friends after class to try to help me figure out what we were doing during class. I struggled to understand the deeper math concepts that had previously been foreign to me.”

Of the 2012 students, Brynlee commented that “all my math classes are very intimidating because none of it is algebra or calculus. It’s more abstract. It’s math by theorem, not like what you would consider a normal high school math class. Basically all we do is prove things, and I had never written a formal proof in my life before I got here.”
Kaylee echoed this emphasis on the abstract nature of math during her 2012 experience.

“We don’t use numbers but we only use theorems, explain [them], and develop proofs. We use Greek symbols. ….We focus on one thing, like topology. In public high school, you learn different lessons, but we learn one thing then smaller things from that – more concentrated here.”

In the 2012 Governor’s School, students reported that, not only were they involved in classes on number theory, topology, and set theory, but also they chose an area for research. Ten topics were offered at the beginning of the session, and they prioritized their interests and were then assigned their topic and research group of 3-4 based on their interests. In the 2012 program at the time that they were interviewed, Kaylee reported that she was researching the historical development of Pythagorean triples, and Brynlee described investigating series and sequences.

Aria discussed the challenge of doing mathematical research. “At first it was really hard. It’s difficult to jump into researching a topic you don’t know anything about. But after a while it got really fun. You learn your way through things, and pick up other topics. We discovered that counting things in algorithms overlaps group theory and different topics in the math groups, so that’s very cool.”

Although the classroom observation indicated that students worked alone to solve problems, most of the alumni and student interviews described collaboration with their peers. Like many other program alumni attending in different content areas, when asked to describe the Area I experience, Samantha vividly remembered the arrangement of students in a circle, and the powerful effect of that setting on her in 1986. In contrasting the experience with her
high school classes, she reflected that “the thing I remember most is that in my school we sat in rows, but in Governor’s School we sat in a circle, and it was more student-oriented and student-led than teacher-led.”

The Area I mathematics classes in 2012 caused Vanessa to re-evaluate her options in pursuing a math career. She had previously only known that you could be an accountant or a teacher of math, but came to the awareness that mathematicians can also deal with the theoretical. “It’s about how you take steps in mathematics, like if you wanted to make theories for yourself instead of crunching other people’s numbers, which is the most universal careers, like accountants, but if you really want to make a name for yourself, you have to understand the theoretical side, the side where you come up with a concept and you either prove it or disprove it. And you learn something from both.” Although she had considered only teaching, she concluded from hearing mathematicians speak during her 2012 experience that the theoretical math professions can also be viewed as helping professions, a quality that she valued in a career. “Hearing others speak made me realize that teaching is not the only way to accomplish this. Open your eyes. See what else there is.”

When asked to describe her most memorable learning experience in the first three weeks of her 2012 experience, Brynlee gave the following account. “In research the other day, probably 3 days ago, we were doing a proof on the board which stumped me and one of my research partners for a good two days. We were doing it on the board and suddenly I just got it, and I was so happy, because I get frustrated when things are so hard to understand, but I finally understood it, and I was able to go back that night and I was able to write a formal proof for it …and I had done a very long and in-depth proof that included multiple other
proofs. That was just very satisfying and memorable because I felt so awful about myself and so good that I could finally understand and be successful.”

**Summary.** While all Area I mathematics students and alumni described struggling with advanced, abstract content that required higher order thinking, most reflected on the positive ways that the challenge ultimately developed their confidence. Brynlee even described struggling with developing a proof during her research and finally solving it as her most memorable experience in her first three weeks of the 2012 program. Providing instruction that requires these academically gifted mathematics students to wrestle with challenging concepts in a non-graded environment allows them to experience struggles that most students experience daily in their math instruction. Opponents of programs for academically gifted learners have frequently expressed fears that providing a program exclusively for these students will make them feel superior. Responses from these Area I mathematics students indicated that these fears are ill-founded. Instead, students felt overwhelmed within a “new norm” of students with their same abilities. The classroom observation and interview data point to the Area I mathematics instruction’s being well-founded in two dimensions of the theoretical framework - advanced content and higher order thinking. Issues and themes, the third dimension of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003), are only somewhat evident, mostly in the research topics.

**Area I natural sciences curriculum and instructional approaches.** The Area I natural science curriculum and instructional approaches were examined through two program documents, a classroom observation in the summer of 2012 in an Area I natural science class, and interviews. Three alumni were interviewed, and their experiences at Governor’s School
spanned from 1979 to 2011, two on the Governor’s School West campus and one at Governor’s School East. In addition, four 2012 students were interviewed while in the fourth and fifth weeks of their five-week Governor’s School experience. Data from the classroom observation and interviews with students and alumni indicated that the Area I classes in natural sciences offered a challenging experience. In addition, students and alumni described being exposed to topics and laboratory experiences that were both novel and engaging.

**Document review of written curricular documents related to Area I natural sciences.**

*The Governor’s School Staff Report, 1965.* In the original curricular document for the Governor’s School (Carter, 1965) which chronicled the first three years of the program from 1963-1965, the curriculum for natural science was described as being focused “on theoretical science as opposed to applied science” (p. 44). Students were expected to observe, postulate, test, and theorize to acquire firsthand understanding of the scientific method. That meant that “laboratory exercises should be not only open-ended but also open at the beginning” (p. 44). To this end, the document described the best laboratory exercise as being a blank sheet of paper. Problem solving was the major focus of instruction. Stated objectives related to advanced content included students’ developing an “acquaintance with the impact of science on man throughout history and especially in the mid-20th century” [and with] ”the methods of science” (Carter, 1965, p. 45). The need for higher order thinking was alluded to in objectives that sought to develop in students an “orientation toward open-minded, scientific attitudes” and “acquaintance with new techniques for attacking scientific problems” (p. 45). Interdisciplinary connections were emphasized in the objectives as well, not only with the historical developments in science but also the “realization that the disciplines of science are
inter-related, and that they have a firm mathematical basis;” “acquaintance with the literature of science, and realization of the importance of publication;” and “introduction to the philosophy of science, with emphasis on $20^{th}$ century innovations” (p. 45). These objectives clearly reflect all three dimensions of the theoretical framework, the Integrated Curriculum Model (VanTassel-Baska & Little, 2003): advanced content, higher order processes, and issues and themes that enhance interdisciplinary connections.

In the first year of Governor’s School, 1963, students in Area I natural sciences were organized into three groups based on their expressed interests. Two groups were focused on physical science and one on biology. Both groups also dealt with interrelationships among the scientific disciplines. In the laboratories, students learned “the scientific method of accurate observation, conceptualization, testing, and drawing conclusions firsthand” (p. 46) while studying solution theory, chromatographic separation, gas kinetics, germination rates, and food chemistry. Students were allowed the option of more in-depth study into specific areas, and many took advantage, but the extended in-depth study was not required. One student “devised a rather sophisticated chromatographic scheme for the separation of certain cations” (Carter, 1965, p. 46). Even in the first summer session, visiting lecturers and field trips played a part. Speakers provided expertise on the space program, relativity, and theoretical physics. Field trips acquainted students with research and technology in spectrometry, the laser, chromatography, the electron microscope, and radioisotopes at Western Electric Corporation, R.J. Reynolds Tobacco Company, and Bowman Gray School of Medicine.
In 1964, the second year of Governor’s School, the major differences noted in the report were in biology. There was a shift from a biochemical focus to organic evolution. No explanation was given in the 1965 report for why this change was implemented. Themes addressed within the Area I biology classes included diversity, adaptation, speciation, and population genetics. The physical science instructors chose to stress the theory of relativity more heavily. The inclusion of the theory of relativity as a topic was due to its treatment by a visiting lecturer who spoke to students during the first two summers, Dr. Robert Brehme. According to the document, Dr. Brehme had shown that “this concept could be grasped by gifted students if presented properly. Here again, it was apparent that no theory is too esoteric for these gifted high school students. Relativity is normally reserved for upper-level college physics courses” (Carter, 1965, p. 48). Additional individual project work was encouraged, and the faculty served “only as a resource person for the student rather than as director of the project” (p. 48). The field trips from the first year were repeated in the second. The changes made indicate the Governor’s School’s openness to reassessing the instructional program in terms of student readiness and student interest, as well as in terms of current developments in natural sciences.

Furthermore, according to the 1965 report, the 1965 session of Governor’s School saw a shift in the interest of the students, and the program responded to this shift by having two-thirds of the students in biological science and one-third in physical science. The physical science students explored the Noble Gas compounds and theories, which were “a post-1962 development” (Carter, 1965, p. 49). According to the document, “an attempt was made to revise the students’ whole concept of matter in terms of the energy quanta to matter
relationships existing in the Bohr theory, spectrographic analysis, and relativity” (p. 49). Outside speakers provided to this group of physical science students presented current research on relativity, development genetics, and the space satellites.

Because the student interests had shifted, the biology students rotated between one biology instructor and one chemist, both of whom sought to create a bio-chemical approach. The two groups met together once a week to discuss each group’s work. The framework that provided the structure of the bio-chemical course evolved from “the levels of organization of the living world” (Carter, 1965, p. 49). A decision was made to focus emphasis on the levels below the level of living organism (molecular biology) and above the level of living organism (ecology). There were two reasons for this decision. First of all, traditional biology courses emphasized the organismal level, so it was not the choice for focus. Secondly, most of the exciting and fruitful research at that time was happening in the two areas chosen for focus. The reasoning behind this decision demonstrated a fulfillment of the Governor’s School’s goals to provide contemporary or current theory and practice and to expose students to concepts not otherwise explored in their regular high school programs.

Topics offered within the bio-chemical instruction included the origin of life, preparation and properties of NH3 and CH4, enzymes and proteins, cellular respiration, fermentation, photosynthesis, mitosis and meiosis, cellular development, and chromatography, thus stressing the lower levels of organization. A set of books was incorporated into the study: *Great Experiments in Biology* (Prentice-Hall). According to the document (Carter, 1965), this was a publication of original scientific papers, and the use of this text “proved an invaluable aid in introducing certain historical developments in science. It also demonstrated
that gifted students can read original research papers profitably” (p. 51). In their last two weeks, students participated in an ecological study of the campus fish pond with little guidance from the instructors.

Evident in the data from the first program report in 1965 are the dimensions from the theoretical framework of advanced content and a focus on current issues, themes, and problems in the natural sciences. Implied is the modeling of higher order scientific thinking processes.

North Carolina Department of Public Instruction website. The North Carolina Department of Public Instruction’s (n.d.) Governor’s School website provided a glimpse at the curriculum in natural science from each of the two campuses. Information from the website was retrieved in August, 2012. The Governor’s School-East description mentioned that “since very little of the social side of science is discussed in high school and college science classes, Governor’s School students examine that interface in several areas” (Natural science section, para. 1). At Governor’s School-East, the Area I natural sciences were divided into four areas at Governor’s School-East: 1) Biology (behavioral invertebrate zoology); 2) Geology (mining, energy, and natural disasters as they related to geology and everyday life); 3) Chemistry 1 (chemistry of energy); and 4) Chemistry 2 (hands-on laboratory in organic chemistry). On the other campus, Governor’s School-West, the following five courses were offered: 1) Science Improv: How to Create Your Own Theory, 2) Special Relativity, 3) Neuroscience, 4) Bioethical Frontiers, and 5) Connections. Student products described included “presentations of student research studies and a student classroom essay on the story they have learned about natural science” (Natural Science
The course titles and descriptions provided on the website are consistent with the Governor’s School’s goal to focus on advanced content to which students have not been exposed and current issues, themes, and problems related to the study of the natural sciences.

**Classroom observation of Area I natural sciences.** The observation in the Area I Natural Sciences class was conducted during the fourth week of the five-week Governor’s School program in 2012 and involved the entire 75-minute class period. Students were arranged in a theatre-style classroom with elevated rows of tables and chairs. Seventeen students were in attendance, eight females and nine males. The instructor was at the front with a whiteboard behind him. All students were there promptly, and the class started a minute early. The instructor began by announcing the date and time for the upcoming Science Challenge.

The topic of the day was relativity. The instructor encouraged students to ask lots of questions, reminding them that there are no “dumb” questions, even questions for clarification. He indicated that in the previous days few questions had been asked and little discussion had taken place. This lack of discussion could be due to the room arrangement, since classes observed in rooms arranged in a more circular fashion were engaged in a greater degree of discussion. However, the students in this class appeared to have a trusting and respectful relationship with the instructor, and students interviewed later confirmed that perception.

As an outside assignment, students had been asked to read *The Day the Universe Went All Funny*, a paper written by Kenny Felder (1996), a former Microsoft programmer who, at
the time of the observation, was teaching at a high school near the Governor’s School campus. The paper explained the fundamental concepts of Einstein’s Theory of Special Relativity by presenting paradoxical problems, incorporating intellectual playfulness into sophisticated concepts in physics. Based on their attentiveness and participation in class, students had completed the reading on their own, although no pre-assessment was given and no grades were assigned in any classes.

In response to the reading, one female student began the discussion with a question about time dilation. The instructor used the analogy of the spaceship and Earth that Felder had used in the article, but built on to the concept with further drawings and explanations. Students were extremely attentive, with no side conversations. Only one student out of the 17 present was not writing notes. However, that student, an Asian male, was listening intensely. Throughout the discussion, students asked questions, such as, “Is it possible that since usually the speed of light is kept constant relative to everything else, [what happens if] everything else changes?” Another male student questioned whether a concept would be relative, and yet another asked, “Is time affected by gravity?” A female student inquired, “Does that mean that time is relative?” There was equitable participation by males and females in the discussion, with no student dominating.

The instructor encouraged open discussion with both his questions and his responses to students. At one point, in responding to a student’s inquiry, the instructor said, “What a delicious question!” Another time he responded to a female student’s hypothetical proposition by saying, “That is a very strange but profound thought experiment. You’re right – that does happen.” Students were actively involved in shaping the discussion and creating
their own analogous situations or examples. At one point, the instructor noted that there were three issues from the article that they could discuss and asked which they would like to focus on in the remaining time.

The content presented was new to most students. As he began a transition into the Doppler effect, the instructor asked how many participants had learned about the Doppler effect before. Only three students raised their hands. He also asked if students had studied differential equations, and only four responded that they had. In addition, the instructor and students both exhibited high levels of intellectual playfulness, a characteristic of academically gifted learners (Maker, 1982, b), in their responses. For example, when the Doppler effect of running toward and then away from a red light was discussed, one student proposed that this would be a good explanation to give for running a red light. The instructor responded, “Yes, they would point out that you were traveling half the speed of light and you would vaporize, but it would be a hilarious story to tell the cop.”

Overall, students explored advanced, sophisticated concepts, ones which most of them had not been exposed to previously as indicted by their show of hands related to prior knowledge. Questioning, both by the instructor and by students, demonstrated high levels of analytical thinking and critical analysis through probing deeply into issues and questioning their own existing understandings of physics concepts. Students were all engaged in and focused on the discussion, and seemed to feel comfortable presenting original hypotheses and perspectives.

**Area I natural sciences student and alumni interviews.** To better understand how the curriculum and instructional approaches were perceived by participants, as well as the
benefits that they provided, seven interviews were conducted with participants from Area I natural sciences, four with students in the summer of 2012 during the fourth and fifth weeks of their five-week Governor’s School experience and three with alumni who had attended Governor’s School between 1979 and 2011. Two of the alumni interviewed had attended the Governor’s School West campus, and the other attended Governor’s School East. These interviews provided insights into the consistency of the instructional offerings over time, the differences between the Governor’s School instruction and participants’ regular high school experiences in natural sciences, and the perceptions of benefits to participants. All interviews were conducted individually, with the exception of the interview with Carsyn and Morgan who participated in a four-student focus group. Informational data on the Area I natural sciences students and alumni interviewed are provided in Table 4.4.
Table 4.4

Area I Natural Sciences Students and Alumni Interviewed

<table>
<thead>
<tr>
<th>YEAR</th>
<th>Pseudonym</th>
<th>Race/Ethnicity+</th>
<th>Sex</th>
<th>Urb/Sub/Rur</th>
<th>Region</th>
<th>HS Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>NSci</td>
<td>1979</td>
<td>Jeffrey</td>
<td>W</td>
<td>M</td>
<td>Rural</td>
<td>Mountain M</td>
</tr>
<tr>
<td>Nsci</td>
<td>2003</td>
<td>Sally</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Coastal L</td>
</tr>
<tr>
<td>Nsci</td>
<td>2011</td>
<td>Ashley</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Mountain M</td>
</tr>
<tr>
<td>Nsci</td>
<td>2012</td>
<td>Morgan</td>
<td>W</td>
<td>F</td>
<td>Suburban</td>
<td>Piedmont L</td>
</tr>
<tr>
<td>NSci</td>
<td>2012</td>
<td>Carsyn</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont M</td>
</tr>
<tr>
<td>Nsci</td>
<td>2012</td>
<td>Erik</td>
<td>AA</td>
<td>M</td>
<td>Urban</td>
<td>Piedmont S</td>
</tr>
<tr>
<td>Nsci</td>
<td>2012</td>
<td>Isabella</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont M</td>
</tr>
</tbody>
</table>

Note. NSci = Natural Science; Year indicates the year attended GS; W = White; AA = African American; + indicates that ethnicity was self-reported; S=Sex; F=Female; M=Male; High school size was determined by the size of the high school’s junior class 2011-2012 according to [http://www.ncpublicschools.org/fbs/accounting/data/1](http://www.ncpublicschools.org/fbs/accounting/data/1); S=Small (< 100); M = Medium (100-300); L= Large (>300).

All interviewees in the natural sciences, both 2012 students and alumni, reflected on the advanced content in their Area I classes. In spite of enjoying the advanced content, the students struggled with the challenging nature of what they were learning. For example, when asked about her 2012 natural science classes, Carsyn first commented, “It’s hard; it’s very advanced.” Morgan, also a 2012 student, agreed. “Every time I go to a science lecture, I’m reminded that I know nothing.”

Although Sally and Ashley attended Governor’s School on different campuses and eight years apart, they both reflected on the advanced level and novel experiences provided
by the laboratories and the topics. According to Sally, “it felt very abstract to me at the time, but the hands-on equipment felt new and exciting.” Ashley, who described herself as having experienced homelessness and dire poverty before coming to Governor’s School, stated, “I come from a rural school that doesn't even offer physics. I was able to take physics, forensics, and biology. I was able to do what I couldn't do in public schools, like watch fish dissections. I had opportunities presented that I never would have had.” When asked about her plans, Ashley reported that she planned to attend an Ivy League school that fall, an opportunity which she credited to the experience of Governor’s School, as well as to the dedication of her high school faculty.

The 2012 students in the natural sciences reiterated the novelty of their experiences as compared to their prior exposure. According to Carsyn, “We get to do a lot that we don’t get to do in our regular school, like a lot of forensics that we don’t get to see in high school. I think a lot of people are thinking about possible careers [in these areas].” Isabella also described the forensics class. “Our morning class is forensics-based, so we’ve had a crime scene, looking at background history of the people involved. We did a little more chemistry today with blood, fake blood. The afternoon class is on physics, and we’re going to make musical instruments.” In describing her response to the forensics class, Isabella enthusiastically exclaimed, “I had my mind blown.”

Participants also reflected on the curricular emphasis on current or “contemporary” issues and themes in the natural sciences. Having participated in 1979, Jeffrey remembers the excitement of learning about the latest issues in natural sciences. “The class on genetics was fascinating because the Genome Project had just gotten under way. There were all these
debates about manipulating genetics to get your baby taller or smarter – the ethics of design babies.” Not only did students learn about and debate these issues, but they also created products that allowed them to share their findings with others. An example of such a product was a series of skits that they performed for students in other content areas. Jeffrey reflected, “We actually wrote these skits about futuristic genetic manipulation, about what happens in society if this happens. Not only looking from the standpoint of what it does, but also the impact on society. Would society accept this? What would make it acceptable or unacceptable? We weren’t looking at science in a vacuum, but in the world where it would have to exist. One of the things Governor’s School was trying to teach us was how to get out in the world and make these things happen.”

Similar to the math students, the natural science students in the 2012 program did independent research, or “SCILEMMAS” (Science dilemmas). According to Erik, students ranked their choices of topics and then were assigned to groups of four or five based on these choices. Erik chose to study genetically modified food. Other topics that Erik mentioned as choices included dark matter, emerging viruses, the effect of medical advances on human evolution, the derivation of consciousness from atoms, and the types of chemicals in our drinking water.

Participants also reflected on the higher order thinking involved in their Area I natural sciences classes. Like the participants in both English and mathematics, Jeffrey vividly remembered the powerful effect of sitting as a class in a circle in 1979. “We were generally in a circle, not in rows. Every class was an open discussion, not a lecture like you get in high school.” According to Jeffrey, in 1979, natural science was divided into four sections, with
students completing two sections in each three week period. Sections addressed the topics of modern atomic theory, modern theories of genetics, Einstein’s theory of relativity, and origins of the universe. However, Jeffrey clarified, “While those were the things that we were learning about, the subject material, it really wasn’t about those things. It was about using those things as a backdrop to teach you how to think in creative ways.”

When asked to describe his most favorite, most memorable experience to that point in the Governor’s School program, Erik, like Brynlee in the Area I mathematics, chose to describe an instructional experience that had challenged his thinking. In response to the request, Erik said, “It’s hard for me to choose a favorite, but what sticks out in my mind is when we were talking about relativity in physics class and talking about Einstein. We spent so many days on it and asked so many theoretical questions about what would happen if this happened, such as light in relation to relativity. We had all these crazy theoretical questions and our instructor would answer whether or not they were possible, or what would happen in that scenario. We read a few articles based on relativity. I think I really enjoyed the discussion, so that’s what I enjoyed the most.”

**Summary.** The original program document stated that the Area I natural sciences curriculum should be focused “on theoretical science as opposed to applied science” (Carter, 1965, p. 44). This intent seems to be consistent with the discussion during the classroom observation on the theory of relativity, and the enthusiasm with which Erik recounted that study. In addition, participants recounted that they were exposed to topics, methods, and laboratory experiences that extended beyond their high school experiences and challenged them. Based on the data sources examined, the curriculum in Area I natural sciences reflects
all three dimensions of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003) by providing content beyond the participants’ high school experiences, higher order thinking processes and products that require both critical and creative thought, and a focus on issues and themes that explore the impact of scientific discoveries such as the study of genetic engineering as recalled by Jeffrey and the research topics described by Erik.

**Area I social science curriculum and instructional approaches.** The Area I social science curriculum and instructional approaches were examined through two of the major program documents, a classroom observation in the summer of 2012 in an Area I social science class, and interviews with two students in the 2012 Governor’s School and three alumni whose experiences ranged from 1968 to 2007. The descriptions of Area I social science classes in the written documents focused on abstract concepts and current issues, both of which were evident through the classroom observation and interviews. Data from all sources indicated that the emphasis has remained over time, both in the explicit and the implicit curriculum, on developing higher order thinking processes and examining current issues and themes.

**Document review of written curricular documents related to Area I social science.**

*The Governor’s School Staff Report, 1965.* The original description of the social science curriculum (Carter, 1965) depicted a curriculum centered on the study of man as the theme. This theme was described as a “relevant and necessary pursuit in any society where social engineering is accepted as a legitimate means of affecting social organization” (p. 52). Two major considerations were outlined for this study: 1) “a variety of approaches and interpretations in selecting fundamental issues for consideration, rather than contriving the
more usual descriptive chronological rendering of past events”; and an introduction of 2) “totally new disciplines, with their distinctively scientific methodology, as alternative but valid approaches to the study of man” (p. 53) The document further described possible areas of social sciences that would provide unique experiences for academically gifted secondary students, such as anthropology, economics, sociology, psychology, and political science. Furthermore, the document stated the student objectives for the study of social sciences at the Governor’s School as including “an introductory knowledge of the basic methods employed by the historian, economist, political scientist, psychologist, and sociologist, along with a working familiarity with different reasoning processes, e.g., inductive vs. deductive” and “an improved knowledge of the interrelatedness of the general disciplines within the social sciences, as well as of the social sciences and other general areas of inquiry such as the natural sciences” (p. 54). These objectives reflect the theoretical framework’s emphasis on both content acceleration and higher order processes. In addition, the document set forth additional objectives that included “an acquaintance with alternative interpretations and analyses made by historians, and with criteria of validity in accepting or rejecting such interpretations” and “an expansion of concepts from limited provincial to general universal frames of reference” (p. 54) which reflect the Integrated Curriculum Model’s emphasis on issues and themes as well as critical thinking.

In its first year of implementation, 1963, the Governor’s School’s social sciences program developed a three-pronged approach. Three groups of 16 students spent 45 class hours with each of three instructors. Students were rotated through the three courses, each of which explored one of the following concepts:
1) the distinctive methodology and content of modern social scientific thought as opposed to the historical speculative-evaluative approaches;

2) the development of historical thought with an awareness of the need for accuracy in historical judgments, development of self-discipline toward objectivity in research, and understanding the interrelationships among the several disciplines of the social sciences and the impact of each upon the whole; and

3) the study of philosophical thought with an attempt to discern the influence of its ideas and attitudes upon man’s way of life” (pp. 54-55).

According to the 1965 (Carter) report, students were engaged in establishing a “relationship between scientific thinking in general and the scientific method of the study of human behavior in particular” (pp. 55-56). They were asked to “acquaint themselves with the explanatory framework of the social sciences rather than the narrative, descriptive, prescriptive, and predictive frameworks of other disciplines” (p. 56). Through examining more traditional historical approaches, students were reported to have become familiar with the tools of the historian, “problems of interpretation, historical trends and their meanings, the problematic approach to historical investigation, the impact of the creative arts on given periods in history, and a look at the present as tomorrow’s history” (p. 56). Student products from these studies included the scientific construction, administration, and interpretation of surveys and an opinion poll; debates dealing with concepts like probabilities and statistics and the dynamics of economic systems; audio-visual materials addressing issues such as the psychology of politics and encounter, the Ego and Id, and the drives which motivate people to action. Even in the first year of implementation, the social science classes included guest
lecturers from various fields of social sciences. These descriptions to the curriculum reflect the theoretical framework’s emphasis on higher order processes, such as through the authentic critical thinking in the social sciences, as well as its emphasis on issues and themes, like the impact of the creative arts on given periods in history and the interdisciplinary relationships made with statistics, political science, and psychology.

Small changes were made in the second year, 1964, such as the addition of one text, more emphasis on informal discussion within the classroom, the requirement of a major research paper on critical ideas, and an increase in the number of guest speakers. Students were organized into two sections because of a reduction in the number of instructors from three to two. For the third year, however, during the sixth and seventh weeks of classes, students rotated among the teachers who acquainted them with modern social scientific thought as opposed to historical-speculative approaches, the need for accuracy and objectivity in research, and the study of philosophical thought. The only other reported change was a class activity, a simulated world political project. These changes reflect not only logistical changes, such as was necessary because of staffing, but curricular changes that refine the mission of the curriculum as it was described. Moving students from historical thinking to more current methodologies, increasing their exposure to practitioners through guest speakers, and adding a simulation that focuses on real world problems better addressed the objectives initially set forth for the Area I social science classes. The changes also better addressed the dimensions of the Integrated Curriculum Model through a focus on higher order thinking that modeled expert thinking in the content and on issues and themes within the social sciences.
Three key themes were reflected in the overall description of Area I social science classes provided on the North Carolina Department of Public Instruction (n.d.) website: that students envision themselves as both individuals and participants in society, that history is used to ground discussions of contemporary social problems, and that class discussion and personal experiences are combined in meaningful, analytical ways so that social science is both “social” and “scientific.” Information from the website was retrieved in August, 2012, after the 50th year of implementation of the Governor’s School of North Carolina.

The website described the purpose of the curriculum for social science as being “to explore contemporary concepts in as many of the different fields of social science as possible and to examine those concepts from both domestic and international perspectives” (North Carolina Department of Public Instruction, n.d., Social Science section, para. 2). The emphasis was not on seeing answers but on asking questions. Descriptions were provided of the types of activities and materials that have been included in past Area I social science classes. For example, at Governor’s School East in the past, students read and analyzed excerpts from texts including Jared Diamond’s *Guns, Germs, and Steel*, Benjamin Barber’s *Jihad v. McWorld*, and Robert Putnum’s *Bowling Alone*. They also participated in simulations, experiments, formal debates, and a tour of the North Carolina State Archives. At Governor’s School West, students in a course entitled “American Politics: Talking Points of the Modern Process” analyzed the political process by examining how it played out daily in Washington, D.C. through blogs and the media. They applied political science theories and analysis to question modern processes and the language that those processes have
created. Topics within the course included “How the Reagan Revolution Shaped our Present Paradigm” and “The Cost of Politics” (Social Science section, para.3).

Classroom observation of Area I social science. A classroom observation was conducted in an Area I social science class in the summer of 2012 as part of a pilot study. Data were archived for use in this research. The observation lasted the entirety of the class period, 75 minutes. Of the 14 students in the class, all were White, eight were male and six were female. Although the room was arranged with individual desks in a row, students arranged themselves into more of a circular configuration, with most sitting along the outside walls or clustered close by so that they could see each other.

The instructor for the day was a substitute instructor who had taught social sciences at Governor’s School previously and who, during the academic year, taught at a local high school. He began the class by saying that he understood from their instructor that they were interested in talking about affirmative action and confirmed this understanding with the students, inviting them to go on another tangent if they wished.

He first asked the students to discuss what they understood about affirmative action. Students confirmed that their main interests concerned college admissions. Students offered definitions of affirmative action that addressed gender and race, but also included variables such as first generation college students, sexual orientation, financial need, ethnicity, disabilities, and even limited English proficiency. He then asked them which of these variables might be information available on the college application, and which of these variables they had heard colleges might use. He asked them if there was affirmative action for football players, or for people who play the bassoon. Students answered yes. He asked if
there was affirmative action for people whose parents might have attended that college. Again, students answered yes. It was obvious that students did not yet have a clear understanding of the concept of affirmative action, but the instructor allowed them to respond to his questions rather than correcting their understanding. When asked to define affirmative action, one female student responded, “How they make a decision for admissions and how they give a preference.”

The instructor then directed the discussion to why colleges might look at these criteria, and whether or not the criteria were fair. Students explored the contrast between criteria that are measurable and those that are more subjective, and between criteria that reflected merit and effort and those that reflected circumstances. They then discussed the underlying rationale for affirmative action. Three possible rationales were presented by students: that affirmative action was intended to rectify past societal wrongs, that it was intended to create a more diverse culture on a college campus, and that affirmative action compensated for the lack of access and information created by individuals’ circumstances.

The instructor then redirected students’ attention to examining a quotation by President Lyndon Johnson, on June 4, 1965: “We seek…not just equality as a right and a theory, but equality as a fact and equality as a result.” When asked by the instructor to interpret what President Johnson meant, one female student responded, “When I read about equality in 1965 as a result, it seems like a Communist approach. And now after 40 years, equality as result is what we are striving for.” The instructor commented that her observation was very astute and interesting.
Students further discussed the issue, struggling with the meaning. Several expressed a desire that college selection and scholarship processes be color-blind to be fair. One female student mentioned, “We studied in English class about the Declaration of Independence, about the ‘pursuit of happiness’ which means you may not be happy but you have the opportunity to be happy. I think about this the same way. It’s not that everybody should be happy, but you have an equal chance.” Another female student responded, “I think everybody loves the idea of equality, but when it’s put into action, I think some people who used to have the advantage now feel that their entitlement is taken away.”

The instructor introduced the concept of zero sum gain. After a little more discussion, he distributed copies of the article, “Diversity’s False Solace,” from the New York Times Magazine, April, 2004, by W.B. Michaels. Students read the article, and responses included a female student’s saying, “Affirmative action is an easy way out. The real problem is economic equality, which would have a much bigger effect.” A male student responded, “What I got out of it is that diversity doesn’t mean equality. Just because you have a diverse group doesn’t mean that there was a fair system to get there. That’s what we think, but it’s not the truth.” One student cited the G.I. Bill as a way that the United States made a risky investment that paid off by helping the entire economy. The discussion ended with students asking if there was affirmative action in the selection of students to attend Governor’s School. The instructor responded that data about a student’s socioeconomic level, race, and ethnicity are not included on the Governor’s School application, and affirmative action is not a factor in the selection process. As class ended, the instructor encouraged them to continue the conversation among themselves.
The student responses indicated a lack of familiarity with the concept of affirmative action. The indication from the observation was that the concept had not been addressed in their regular high school social studies classes, and students had many misconceptions about the rationale and practice of affirmative action in the college admissions process. Rather than directly point out the errors in their understanding, the instructor took a more didactic approach in leading them through a sequence of questions that helped them discover their own fallacies of thinking. He then used a quotation by President Johnson to examine the larger issue of equality. Therefore, while the content was new to the students and could be considered advanced, the focus of the discussion was on addressing the second and third dimensions of the theoretical framework: higher order thinking processes and the examination of issues and themes.

**Area I social science student and alumni interviews.** Interviews were conducted with three Governor’s School alumni and two 2012 Governor’s School students, all of whom attended Governor’s School as Area I social science students. Alumni attended between 1968, the fifth year of the program, and 2007. Two alumni had attended Governor’s School West, and the other attended Governor’s School East. Informational data on the Area I social science students and alumni interviewed are provided in Table 4.5. These interviews were intended to provide insight into how the curriculum and instructional approaches were perceived by participants, as well as what the benefits were, over time and between the campuses. All interviews were conducted individually, with the exception of the interview with the 2012 students, Sophie and Daphne, who participated in a four-student focus group during the fourth week of their five-week Governor’s School experience.
Table 4.5  

**Area I Social Science Students and Alumni Interviewed**

<table>
<thead>
<tr>
<th>Area I</th>
<th>YEAR</th>
<th>Pseudonym</th>
<th>Race/Ethnicity+</th>
<th>Sex</th>
<th>Urb/Sub/Rur</th>
<th>Region</th>
<th>HS Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>SocSci</td>
<td>1968</td>
<td>Edward</td>
<td>W</td>
<td>M</td>
<td>Rural</td>
<td>Coastal</td>
<td>S</td>
</tr>
<tr>
<td>SocSci</td>
<td>1973</td>
<td>John</td>
<td>W</td>
<td>M</td>
<td>Rural</td>
<td>Mountain</td>
<td>L</td>
</tr>
<tr>
<td>SocSci</td>
<td>2007</td>
<td>Darcy</td>
<td>W/Arab+</td>
<td>F</td>
<td>Urban</td>
<td>Piedmont</td>
<td>M</td>
</tr>
<tr>
<td>SocSci</td>
<td>2012</td>
<td>Sophie</td>
<td>W</td>
<td>F</td>
<td>Rural</td>
<td>Piedmont</td>
<td>M</td>
</tr>
</tbody>
</table>

Note. SocSci = Social Science; Year indicates the year attended GS; W = White; W/Arab = White/Arab descent; Ital/Chinese = Italian/Chinese; + indicates that ethnicity was self-reported; S=Sex; F=Female; M=Male; High school size was determined by the size of the high school’s junior class 2011-2012 according to http://www.ncpublicschools.org/fbs/accounting/data/; S=Small (< 100); M = Medium (100-300); L= Large (> 300).

In 1968, Edward attended Governor’s School from a small, rural high school at the height of the Civil Rights Movement. Martin Luther King had been killed, and Bobby Kennedy was shot during the Governor’s School session. According to Edward, these events had a monumental role in shaping the curriculum that year, and he credits the experience, especially in the Area I social science class, with shaping his thoughts still as an adult. “We read *Machiavellian Ethics*. The first statement in this book was that every thought, and every action, and similarly every pursuit, is thought to aim at some good. People think that things are the way they are because it’s the fault of the driver in front of you stuck in the traffic. But you have to look way beyond that. When you think that every thought and every action is aimed at good, then it’s easier to understand why someone does something. They may be...
wrong, but the person thinking [about those actions] thinks they are good. And I thank Governor’s School for pointing this out to me, and for making me … very tolerant.” Edward reported that his high school was fully integrated in his senior year after he returned from Governor’s School, and when the principal gave a banquet, Edward was the only White student who attended. “I’m glad Governor’s School opened the world to me. Without it, I don’t know what I’d be. Would I hate people? Would I be a racist? You can see how I look back on that. It really changed my life, and in probably many other ways that I don’t know.”

As was true in the other Area I classes, John commented on the arrangement of the classroom into a circle or rectangle for discussion. Remembering his 1973 experience, John reflected, “What I recall is that we did not have a preset curriculum that I can remember. We sat around a long table. The instructor… was very interested in the civil rights movement. He was a sociologist, I’m pretty sure. He ran it in a discussion format. He was a low-key personality and speaker, very knowledgeable, very good at drawing out the different kids.”

Darcy, recalling her 2007 Governor’s School experience, described a focus on issues and themes. “The curriculum was grouped in these sort of thematic approaches. We would tackle one issue a week. Some topics were the Palestinian-Israeli conflict. We talked about general approaches to conflicts in the U.S. and in the world.” Having gone to a top-ranked urban high school and grown up with university professors as parents, Darcy still felt that the Governor’s School experience was monumental in her life. “The teachers were passionate and involved at my high school. But at Governor’s School, there was more freedom to talk. If our discussion took us from Presidential elections to the prime minister of India, that was not a problem. It wasn’t as if we had missed a goal for the AP exam.” Even after having
graduated recently from a competitive private college, Darcy insisted that Governor’s School was a pivotal experience for her. “It was the first time I was involved in something [where] I was learning about new ideas and new perspectives that I had never thought about before. It was like, ‘Oh wait, I’ve never heard of that.’ It was like a high. It was intellectual stimulation, and you come off of it but can’t stop talking about it. It changed my life.”

Interviewed during her 2012 experience, Sophie mentioned the advanced content. “It’s very hard. I’ve heard terms I’ve never heard before.” In comparing their high school experiences to Governor’s School, both Sophie and Daphne described their high school teachers as caring, quality teachers. Although the Governor’s School curriculum offered a challenge, Sophie did not blame her high school faculty on the lack of challenge provided through their teaching. As she described her high school, “We have fabulous teachers [in high school], but with the curriculum they are given, they have to rush through everything. You learn the tip of the iceberg. But here we’ll get the deep facts that go beyond that, and then watch a film that goes even deeper.” Daphne described the instructors at Governor’s School as passionate and really caring, and remarked that, although she attends a nationally-ranked early college high school, Governor’s School was more like a college setting with a mixture of lectures and discussions. Daphne also expressed some concern about returning to her high school for her senior year with a new sense of awareness of the issues they had discussed in Area I. “Reintegration into high school will be interesting, and when we go back to regular high school, it will be a little bit ostracizing because we will recognize things that we didn’t see as disrespectful before.”
Summary. The written curriculum, classroom observations, and student and alumni interviews describe Area I social science classes as heavily focused on the development of higher order thinking skills and current issues and themes in society. The 2012 students indicated that the content was advanced and presented terminology and concepts with which they were not familiar, as confirmed by the classroom observations. Therefore, all three dimensions of the Integrated Curriculum Model were addressed. However, the 1965 document’s description of the curriculum as including “totally new disciplines, with their distinctively scientific methodology, as alternative but valid approaches to the study of man” (Carter, 1965, p. 53), as well as a multidisciplinary approach to social science that would include economics, anthropology, and sociology, did not appear as evident in the classroom observations or the interview data. This may be indicative of a shift from the original description of the program in its third year to the website’s description that better aligned with observed practice.

Area II Curriculum and Instructional Approaches

Described in the first program document as a class to develop “general conceptual development” (Carter, 1965, p. 15), Area II classes were unique and core components of the Governor’s School curriculum from its inception in 1963 through its 50th year in 2012. However, their structure, focus, and staffing evolved over the first five years of the program. To examine the Area II curriculum as it was written and as it was implemented, four major program documents were analyzed as the first step of constant comparative analysis: the Governor’s School Staff Report (Carter, 1965); Opening Windows Onto the Future (Lewis, 1968); the North Carolina Governor’s School Program Document (North Carolina
Governor’s School, 2005); and the North Carolina Department of Public Instruction (n.d.) website as retrieved in August, 2012. Then these documents were compared with data from interviews with key leaders, classroom observations of an Area II class, and interviews with 14 Governor’s School alumni and ten 2012 Governor’s School students.

Alumni interviewed had participated in the Governor’s School from 1963, the first year of the program, to 2011, the 49th year of the program. The 2012 students were interviewed during the fourth week of their five-week program. These data were intended to give a more complete depiction of the intended and implemented curriculum, its alignment with best practices for secondary academically gifted learners, its benefits, and the insights that can be gleaned from changes made to Area II classes over time.

**Document review of written curricular documents.** All four of the primary curricular documents included descriptions of Area II classes. The discussion of these documents follows the chronological order of their development.

**The Governor’s School Staff Report, 1965.** From the beginning of the Governor’s School of North Carolina in 1963, a unique aspect of the curricular design was the inclusion of Area II, a class in which students from all Area I content areas would meet together to “promote [their] conceptual development…on a more generic level of interdisciplinary activity, in order to help circumvent the danger of fragmentation and over-specialization in subject matter areas” (Carter, 1965, pp. 94-95). In other words, the original developers of the curriculum recognized the need for academically gifted learners to synthesize their learning and make interdisciplinary connections. Within the Area II classes, the staff report portrayed students as analyzing both classical writings and contemporary works in order “to lay bare
their theoretical keys or essences” (p. 94). This original report describing the first three years of the program outlined the objectives for Area II as including “a critical understanding of the notion ‘essential idea,’ …the ability to discover by analysis the theoretical key structures of ideas and situations,” and “a recognition of the value of testing private notions and beliefs by putting them up for group discussion and criticism” (p. 95). From its inception, Area II instruction focused on the Integrated Curriculum Model’s (VanTassel-Baska & Little, 2003) dimensions of higher order processing and the exploration of issues and themes, thus addressing the characteristics of academically gifted learners described as the “ability to handle abstractions…and ability to make connections and establish relationships among disparate data” (VanTassel-Baska, 1989, p. 13)

Because there was no model in existence for Area II classes, the Governor’s School faculty and administration made three major changes to Area II classes within the first three years of the program in response to student and faculty needs. These changes provide insight into more generalizable applications to curriculum and instructional approaches for academically gifted learners. The first change was the realization that the Area II classes were intense intellectual experiences for the participants; and, therefore, there was a need for a companion class that addressed the resulting affective needs of these students. As a result, in the second year of the program, 1964, the time allotted for Area II was divided in half to offer a third type of class, Area III. The Area III class will be discussed later in this chapter. The insight gained from this change concerned the need to balance the intense intellectual experiences of academically gifted learners with a means of addressing their affective needs.
The second major change involved staffing of the Area II classes. In the first year of Governor’s School, 1963, each Area I content area instructor taught an Area II class and each student rotated among four faculty members for Area II over the course of the summer. One of the greatest struggles in the beginning for the Area II classes was the discomfort that the content area faculty had with teaching an interdisciplinary course focused on issues. In the first year of the program, 1963, four themes or essential ideas were explored in the Area II curriculum: Art, Justice, Language, and Learning. Students and faculty used a class set of *Great Books of the Western World*.

By the second year, 1964, rather than have all teachers teach all themes using *Great Books of the Western World*, a change was made to allow each faculty member to conduct the program as that faculty member chose, still basing readings and discussion on *Great Books*. Essential ideas chosen included Language, Love, Art, Science, Chance, Knowledge, Patriotism, Justice, and Government. The reason given for this change was “because teachers felt they would be more at home, and, therefore, do a better teaching job, in treating one or more of the ‘great ideas’ in or closely related to their own field of concentration” (Carter, 1965, p. 97). However, content area faculty still did not feel comfortable teaching Area II classes.

Therefore, in the summer of 1965, the program’s third year of operation, another major shift occurred with staffing as the faculty and administration continued to re-evaluate Area II’s effectiveness. Dr. Michael Lewis, who had been an instructor for all three years, became the director of the Area II Program, and six graduate philosophy students were employed as interns, planning the curriculum with Dr. Lewis in the mornings, and teaching a
two-hour Area II session each of four afternoons a week. The essential ideas explored within the Area II curriculum included Art, Science, Language, Logic, Memory, and Imagination. These changes in staffing have implications for the training and selection of teachers for academically gifted learners. While advanced content area expertise is important for teachers of academically gifted learners, additional training, skills, and understandings are needed for instructors be competent and confident in addressing the third dimension of the theoretical model: focusing learning experiences around major themes, issues, and ideas of disciplines as the organizing construct for making interdisciplinary connections (VanTassel-Baska & Little, 2003).

A third change in the Area II classes during the first three years involved the curriculum itself. Rather than using selections from the *Great Books of the Western World*, as was done in the first two years, the third year of Area II began incorporating more contemporary readings and resources. Instructional strategies employed included special research assignments in the college library, lectures, class and panel discussions, audio-visual aids, and art exhibits. A shift in the purpose was stated as being to prepare students for college studies “by exploring with them the basic principles of knowledge underlying and uniting all the disciplines” (Carter, 1965, p. 99). These changes in staffing and program design addressed growing concerns by the faculty and administration about the focus and success of Area II classes. As the 1965 Report stated, “The notion was quickly dispelled that the program was intended to be one slanted toward philosophy as a specialty” (p. 100). Within the first three years, the overall structure and purpose of Area II classes had evolved, but the
faculty and staff would continue to refine the curriculum, as seen in the second program document, *Opening Windows Onto the Future* (Lewis, 1968).

**Opening Windows Onto the Future, 1968.** The second major Governor’s School program document, *Opening Windows Onto the Future* (Lewis, 1968), began with a section entitled “Why Area II: General Conceptual Development?” The section began with the statement that “the rationale for Area II at the GS now emerges” (p. 35). It was evident from the first two program documents that the beginnings of the Area II curriculum had been difficult, the purpose of the course had been misunderstood, and the faculty had not felt comfortable teaching an interdisciplinary, thematic course outside of their content areas. At the time *Opening Windows Onto the Future* (Lewis, 1968) was written, the Governor’s School was in its fifth year, and the Area II classes were described as an “attempt to open windows” (p. 37) onto the structure and patterns of new knowledge in multiple fields, including painting, mathematics, music, economics, and theology. In a later section of the document, Area II was described as “deliberately designed to confront gifted youngsters with the latest ‘way-out’ abstractions, generalizations, and theories that undercut the more fragmented special disciplines” (Lewis, 1968, p. 39). Thus, by 1968, the Area II Program had evolved from a study of classical ideas, such as those presented in *Great Books of the Western World* series, to more current and contemporary issues, such as those in the 1968 Governor’s School’s Area II text, *The Logic of the Sciences and the Humanities* by F.S.C. Northrop. This text was chosen because it pointed to the course purpose of the “reorganization of the logical structure of thought itself” (Lewis, 1968, p. 36).
The North Carolina Governor’s School Program Document, 2005. The third major document of the Governor’s School of North Carolina, the North Carolina Governor’s School Program Document (North Carolina Governor’s School, 2005), described Area II classes as “engaging in general conceptual development and exploring connections between the disciplines” (p. 4). This description was consistent with the both of the prior documents. The Class Curriculum section of the document offered an introductory description of Area II classes which emphasized processes, ideas, and theories by describing them as a place where “students and teachers sharpen their critical thinking as they explore connections between and among the ideas and theories central to Area I disciplines” (p. 7). Again, clarification was made of Area II not being a philosophy course, although it was described as being divided into standard areas of philosophical study: “Art/Aesthetics, Ethics/Moral and Political Philosophy, Epistemology, Philosophy of Science, Theory and Philosophy of Language/Rhetoric, and Logic/Critical Inference” (p. 16). The goals for the planned course clearly focused on the theoretical framework’s second and third dimensions on higher order processes and the use of issues and themes for interdisciplinary connections. Those goals included to encourage students to become careful and critical thinkers, to think about new and ‘vanguard’ ideas, to identify general abstract concepts that underlie events, to understand epistemology, and to “lift learning beyond skills or knowledge acquisition of one discipline into learning about learning itself” (p. 18).

Of greatest significance was the statement in this 2005 document that “Area II is at the center of our curriculum – its most unique and ambitious intellectual feature and its unifying core” (North Carolina Governor’s School, 2005, p. 16). This sentiment was reiterated by key
administrators and curriculum writers during interviews for this study, and evidenced in the response of students and alumni.

**North Carolina Department of Public Instruction website.** The North Carolina Department of Public Instruction’s (n.d.) website on the Governor’s School, as retrieved in August of 2012, described the interdisciplinary nature of the make-up and content of Area II and the focus on constructing understanding of contemporary issues. Although it reverted to referring to Area II as philosophy, the website clarified that it was “not so much a course on classical philosophy and philosophers as a course in critical, creative, philosophical thinking and questioning” (Area II section, para.1). Sample instructional strategies were described as including “a reading and discussion section, a sensory-deprivation exercise, a game, a film, or a walk around campus” (Area II section, para. 1). Films shown and discussed during Area II classes included *Baraka, The Waking Life, The Apostle, Donnie Darko, Pi,* and *Bamboozled.* Texts listed were a mix of contemporary and classical writings, including excerpts from Friedrich Nietzsche’s *Twilight of the Idols,* Stephen Hawking’s *A Brief History of Time,* and Plato’s *The Republic.*

**Classroom observation of Area II class.** In order to gain an understanding of the Area II curriculum as it was implemented, an Area II class was observed in the summer of 2012 during the fourth week of the five-week Governor’s School program as part of a pilot study. The data were archived for use in this research study. The observation in the Area II class was for the extent of the 75-minute period. Present were 16 students, six males and ten females, and the female substitute instructor. Four students were Asian American and the remainder of the students appeared to be White. Written on the board was a homework
assignment reading, “Try to solve the problem of evil. Solve the problem of non-natural evil. Solve the problem of the origin of human suffering.”

Students in the Area II class were arranged in a circle sitting in small self-contained desks. All students were in their places seven minutes before the class began. The Area II instructor was not present, but the staff member present reminded students that they were to spend the class period formatting and rehearsing their arguments to present at the next class meeting. Each student had previously been assigned a perspective – monotheism, polytheism, agnostic, or atheist. Various students elaborated on their assigned tasks by saying that they were each to make a statement from an assigned position, then allow others to raise objections, after which they were to respond with their own arguments. In the next class period, they would be presenting their assigned positions while the instructor responded.

One female student volunteered to go first in practicing her argument. She defined suffering as being in two categories – physical and emotional, with physical being both suffering that is inflicted by others and suffering from natural disasters, hunger, and poverty. Other students responded with reminding her of the instructor’s delineation between physical and emotional suffering. A second female student presented a proposed opening statement that human suffering was the result of human tendency to create an “us-group” and a “non-us-group.” She used examples from history, such as Hitler and the Jews. Her assigned perspective was that of an agnostic, which she stated did not require her to account for the origin of evil since an agnostic would not believe in the existence of God. As she said, “It is just the way it is.” A male student, reflecting on the writings of the physicist Stephen Hawking, stated that Hawking says, “Whether or not God created the laws of physics, [God]
doesn’t rate them, and he doesn’t go above those rules. Whether or not God created the laws of physics, whatever we see around us as natural evil is because of those certain principles that we have felt.” He proceeded to give an example of asteroids and hurricanes following the laws of physics and creating destruction. He concluded his argument by noting, “That’s not my view because I’m polytheistic, but you can use it. Do you guys agree with what I said?” This student and his classmates were adept at arguing from the perspective that was assigned to them as well as thinking from the perspectives assigned to others.

Throughout the class discussion, students openly but respectfully disagreed with each other and provided defensible arguments from their assigned positions. Often a student speaker was asked to clarify the position stated so that other students could understand that student’s assigned perspective and assess its authenticity. Frequently a student expressed concern that the instructor would not accept an argument based on something that had been stated by the instructor in previous classes. Students seemed very aware and respectful of their Area II instructor’s depth of knowledge and understanding about the issues being discussed.

After exploring the relationship between suffering and the human inclination to look at people as being like them or unlike them, a female student redirected discussion by positing that “people who cause human suffering have the need to be in power.” Immediately, students questioned whether it was the need or desire for power, the interdependent relationship between evil and power, the conundrum created by self-mutilation which causes suffering without power, and the difference between considering the origins of evil as psychological, biological, or environmental. Elaborating on the biological origins of evil,
one male student discussed a book he had recently read that examined brain functioning and its relationship to violent tendencies. Other students cited examples of diseases, such as Huntington’s, that escalate individuals’ violent behaviors.

Questioning this relationship between physical and psychological suffering, one student pointed to boxing in which an individual experiences physical suffering but not necessarily psychological. Students then initiated an examination of the levels of suffering, which one male student described as natural, unplanned, and intended. Other issues raised and explored included whether or not children who die from hunger know that they are suffering, and the relationship between their suffering and evil; whether or not a sudden death of an individual can be considered suffering; and the assumption that some people can commit evil, even murder, without suffering themselves.

Then a male student who had been quiet throughout the discussion modestly asked if he could present his argument, but expressed trepidation that only the absent instructor would understand it because he was from a Hindu background. The others encouraged him to go on and he proceeded, with the support of a Hindu female in the class, to explain his faith’s understanding of the beginning-less cycles of life and their relationship to evil and suffering, knowledge and ignorance. Students were respectful and asked thoughtful, honest questions to get a better understanding. Their openness allowed one female student to share that she had not grown up in a faith community and did not attend church except a little with her mother, so she was leaning toward defining herself as agnostic. When asked by another female student if she perceived that we are suffering all the time, the self-defined agnostic responded, “Not necessarily. It just means when there is life, there is suffering. So that was
my emotional suffering the past couple of days…. It’s going to take years and years to find, but I cannot put a label on myself. I have trouble with the label agnostic even, because I don’t know.”

More discussion ensued, with some students’ becoming more decisive in their perspectives. Discussions explored themes related to the contradiction between a god’s omnipotence and omniscience, the Virgin Mary’s being pregnant without her willing it, and whether or not all suffering is for ultimate good. The staff member present rarely interjected and closed the discussion with a reminder that they had readings due that Thursday and a film. Throughout the observed class, students were engaged, respectful, and attentive to each other and to the staff member. In addition, they were open to critical analysis of their own thinking and of the arguments they presented from their assigned perspectives. Both the second and third dimensions of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003), higher order processes and a focus on issues and themes, were evidenced in the observed class.

**Student and Alumni interviews.** Interviews were conducted with ten 2012 Governor’s School students during the fourth and fifth weeks of their five-week experience and with 14 alumni of the Governor’s School. The alumni attended over a span from the first year of the program, 1963, to 2011. The interview protocol is included in Appendix D. Descriptions of the ten 2012 students who were interviewed are provided in Table 3.2 and Table 3.3 provides data on the 14 alumni who were interviewed.

Indicative of Area II’s struggles and changes as it evolved, the alumni who attended in the first decade remembered little from Area II classes. DeeDee did not recall having an
Area II class in 1963, Tucker remembered hers as a humanities class in 1966, and John only recalled that his 1973 Area II classroom was arranged in rows with little discussion taking place. Even David, whose 2001 experience is much more recent, remembered little of his Area II class except that, like John’s, his Area II classroom was arranged in rows and the instructor mostly lectured with little discussion.

By contrast, all other alumni and students described Area II classes as being arranged in circles or rectangles, with students and instructor facing each other, and could share vivid memories of the experience and its benefits. For example, Elizabeth, a math student from 1985, remembered reading *Siddhartha* and recalled some of the discussions in which students engaged. “I remember that we sat in a circular crescent. I remember that everybody was valued - what you said, the tone of the instruction.” Jeffrey described his 1979 Area II experience by saying that “Area II was, well they called it ‘epistemology,’ I suppose, but it was actually the science of thinking. It was the concept of building a rational argument, and [of inferring] things from the information that you have.” This description was consistent with the description provided in the *North Carolina Governor’s School Program Document* (North Carolina Governor’s School, 2005).

Sally who attended in Area I natural sciences from a rural area of coastal North Carolina recounted, “The area II and III were just as enlightening, mind-blowing, life-changing from an understanding of the world,…as natural science was.” Ashley, who had come from rural poverty, remembered the emphasis on process and issues that were discussed. “Critical thinking is what I remember the most. And we discussed, I mean, the things we discussed, there was really no right answer. One question I remember is, ‘What is
art? How do you define it - street art, things like that?’ Another one is, ‘How do you define living? Is living something with a soul? Is it like a plant, like with organs? What if you're in a coma?’ you know, and then even, ‘What is reality?’ It's really a different way of thinking than in a traditional high school.’" Darcy, having come to Governor’s School from an urban, competitive high school in 2007, also discussed the thinking required in Area II. “That was a mental exercise because we were doing all sorts of psychological, not games, but philosophy that makes your brain hurt. We were delving into Descartes; we were delving into Socrates. I was sixteen years old, and I was sitting and debating the merits of philosophy with kids my age. If you look at TV today, it says that kids that age are getting pregnant, not debating whether or not the Cartesian circle is real or not.”

Not only are students from small rural schools like Ashley’s challenged by the level of thinking in Area II classes, but also students who are accustomed to high-quality, challenging high school instructional programs like Darcy’s. The second dimension of the theoretical framework (VanTassel-Baska & Little, 2003), developing higher order thinking processes, was frequently referenced in the benefits of Area II classes that were arranged in a circle or rectangle and that engaged students in open discussion. Jeffrey remembered the challenges to his own thinking during Area II discussions. “Sometimes you find that the reason you are supporting [a position] has no basis in reality - which it’s based in prejudice, preconceptions, things that you’ve always believed.”

Students in the 2012 program reflected on the Area II focus on issues and themes. Vanessa had notes in her notebook from her Area II class about the abstract concept of power -how it is perceived and realized. When asked to describe her Area II experience, she said
“It’s about not getting mentally comfortable. Emotionally we’re comfortable, but you have to think, ‘Did you look at all sides of the story? Did you think about what else could be?’ A lot of us pride ourselves on thinking outside the box, but the box is very big!”

Students described the differences between their Area II classes and their high school experiences. Carsyn contrasted the openness in Area II discussions with experiences in her high school. “Back at my home school, people will shun you or laugh at you if you don’t believe the same thing, but here they say that’s an interesting opinion. Especially in Area II when we talk about aesthetics, and the meaning of life, and deep subjects. It’s nice when everybody is willing to listen to everyone else.”

In discussing the benefits of Area II classes even during their Governor’s School experience, students pointed to the emphasis on higher order thinking and the structure of discussions around issues and themes that lead to interdisciplinary connections. Brynlee saw connections between her Area II discussions and her Area I instruction in mathematics. “Philosophy is also very much about logic. Just like in math, it’s about “How can you prove this works?” Aria talked about the impact that Area II was having on her thinking and beliefs by reflecting on the topics captured in the classroom observation previously described. “I definitely think the most memorable learning experience I’ve had is discussing the problem of evil, because that’s a problem I’ve faced…. I was raised Catholic but I haven’t gone to church in several years. I’ve dealt with lots of situations that made me question why there are bad things and why God lets things happen. Two people in my class started arguing Hinduism and what they believe. After Governor’s School, I’m going to research Hinduism and whether or not I want to convert.”
Summary. Because of its unique nature and a lack of a template for Area II classes when they began in 1963, the first five years of the program saw many changes in response to student and faculty needs. These changes included dividing the instructional time with an affective component (Area III) by the second year, employing instructors just for the Area II classes rather than using Area I content instructors, and refocusing the curriculum away from historical thought to more contemporary issues. Responses from alumni demonstrated that these changes were well-founded. Among alumni from the first decade of the program, DeeDee did not remember having an Area II class in 1963 and Tucker remembered hers as a humanities class in 1966. For John in 1973 and David in 2001, Area II classrooms were arranged in rows with the instructor mostly talking or lecturing, and they could remember little from the experience. However, all other alumni described their classroom arrangements as being in circles or rectangles and remembered vibrant discussions focused on contemporary issues that challenged their thinking. Students during their 2012 experiences all described active, open discussions that were affecting their own beliefs and understandings.

Area III Curriculum and Instructional Approaches

First implemented in the second year of the Governor’s School of North Carolina, 1964, Area III classes were described in the first program document as being focused on “Personal Development and Self-Insight” (Carter, 1965, p. 15). In order to understand the rationale for adding Area III, as well as the structure and benefits of the classes, this section examines data in the order that constant comparative analysis was conducted: the four major program documents, a classroom observation of an Area III class in the summer of 2012, interviews
with 14 alumni whose experiences ranged from the first year of the program in 1963 to the 49th in 2011, and interviews with ten students who attended in 2012. Analysis of the data examines the alignment of the curriculum and instruction with the theoretical framework and characteristics of academically gifted learners. Changes made in adding Area III and within Area III over time are examined to glean understandings about what works with academically gifted learners.

**Document review of written curricular documents.** Each of the four primary curricular documents included a description of Area III classes. Therefore, the discussion of these documents follows the chronological order of their development.

**The Governor’s School Staff Report, 1965.** Area III was added in the second year of the Governor’s School, and remained a critical element of the curriculum through 2012. In the 1965 (Carter) document, the author described the development of Area III as a response to the observation that gifted learners, feeling different from their peers, were “prone to seek social approval and acceptance by ‘hiding their light under a bushel’” (p. 16). As a result, Area III classes were developed as “curricular provisions designed to promote self-insight and personal development in understanding oneself and one’s relation to society” (p. 16). Describing the lack of programs that addressed this need in both regular secondary schools and special programs, the document described what made Area III classes distinctive. “It is the first endeavor attempting an academic approach toward solution of developmental problems of the intellectually superior, and it recognizes the depth to which the intellectually superior are concerned with questions related to the realm of personal development” (p. 102).
First implemented in 1964, the curriculum for Area III was credited in its conception to “a doctoral thesis which outlined twelve interrelated units of study” (Carter, 1965, p. 103) initially designed to be a year-long study. The author of the doctoral thesis was not stated. The twelve units were: Introduction, The Nature of Personality, The Nature of Intelligence, Intellectualism and Anti-Intellectualism, Individual Differences, Frustration, Communality, Conformity, Vocation, Philosophy, Self-Evaluation, and Program Evaluation.

In its first year, only the Area I academic and visual art students participated. According to the 1965 document, the exclusion of students identified in the performing arts “seemed to be demanded by the original design of the thesis” (Carter, 1965, p. 104). Area III classes took place during the first year in single 90-minute session per week. Seminars, the instructional model employed, examined the factors influencing individuals and their effective and ineffective problem-solving strategies through an examination of real life biographies and fictional literature.

By the second year of Area III implementation, 1965, four changes occurred in scheduling and instruction. First, performing arts students participated in Area III classes. However, they formed groups of only performing arts students and completed their Area III experiences in the first half of the seven-week program. All academic and visual art students then completed their Area III classes in the second half of the program. Secondly, instead of having a total of seven 90-minute Area III classes, every student had a total of 14 one- to two-hour class periods of Area III. A third change was in the curriculum itself. Only three units were addressed instead of the original 12: “(a) personality and intelligence; (b) problems in conformity; and (c) problems in frustration” (Carter, 1965, p. 105). Fourth, a
change in methodology involved a “team approach using four large group sessions for
lectures related to the three problem areas. The lecture titles were: (a) Theories in
Personality; (b) A Biological View of Man; (c) Conformity and Anti-Intellectualism in
Society; (d) The Frustration of Holden Caulfield in *The Catcher in the Rye*” (p. 105).

Several justifications were given for these four changes. The first involved the selection
process for Governor’s School students and the resulting differences in their needs. In the
early years of the program, students selected in the performing arts were not required to be
academically gifted as well. They were selected by audition only, as well as the school’s
recommendation. As a result, within their Area III curriculum, “the problem areas were
treated much more generally with emphasis on personality development rather than
intelligence, and a less academic approach in the areas of conformity and frustration” (Carter,
1965, p. 105). The academic students read from more advanced sources, experienced the
lectures mentioned above, and participated in a level of seminars “geared toward
interpretation and theorizing about attitudes society holds in relation to the intellectual and
the reaction the intellectual can have to society” (pp. 105-106). The author of this 1965
document then made a profound statement about this need for change, a statement that
provides insight into both the appropriateness of the curriculum for academically gifted
learners, and likewise the inappropriateness the curriculum for students who are not
academically gifted.

As is perhaps obvious, the Area III staff was faced with adapting the ‘Self and Society’
course to a group of people for whom it was not designed, e.e., the students not selected
on the basis of intellectual superiority. We feel that this can be more successfully
worked out in the future with use of biography and autobiography of famous performers.

(Carter, 1965, p. 106)

**Opening Windows Onto the Future, 1968.** By the fourth year of Area III’s implementation, the author of *Opening Windows Onto the Future* (Lewis, 1968) credited Area III with facilitating, and even making possible, the success of Areas I and II. “It is thus not a mere addition or novel tidbit, but an integral completion of the curriculum” (Lewis, 1968, p. 39). Because the characteristics of academically gifted learners lead to affective needs that differ from those of their age peers (VanTassel-Baska and Stambaugh, 2008), Area III classes were designed to prepare students to return to their homes and schools with a greater degree of self-understanding. Two sources of post-Governor’s School anxiety were ascribed in the document to both the characteristics of these learners and to their Governor’s School experience. Those sources were described as the ridicule and frustration that students had experienced in trying to communicate their “creative thinking in Areas I and II“ (Lewis, 1968, p. 39) and the “deeper power of abstraction” (p. 39) the students experienced through re-structuring their own thinking in these two classes. As the document states, “In Area III at the GS, we try to give our creative youngsters some insight into the process of creativity and its anxiety-producing mechanisms” (p. 44). To address this concern about anxiety as the result of deep levels of creativity, “reading materials and especially the discussions stimulated by trained teachers in Area III do much to cause our highly intelligent charges to understand the sources of their own anxieties that arise from their creative activities” (p. 44).

**The North Carolina Governor’s School Program Document, 2005.** By 2005, students in the performing arts were required to be identified as both academically gifted and as
outstanding in their area of the arts, as determined by either a portfolio or an audition. This change was made to match more effectively the needs of participants with the curriculum, particularly Areas II and III, according to program leader interviews. Therefore, all Governor’s School students participated in Area III classes, and each class represented students from all content areas. The purpose of Area III classes as described in the 2005 document was for students to “discover links between ideas and lived life” (North Carolina Governor’s School, 2005, p. 7) and draw “on the social science literature and traditions associated with sociology, psychology, and anthropology” (p. 7). As was the case with Areas I and II, this document articulated goals for the preplanning of the course. The goals included to “prompt students to develop a deeper, more thoughtful conception of who they are and what they believe”; to “address psychological, anthropological, sociological, political paradigms that will help them develop more substantive conceptions of themselves and their worlds”; to “present texts (visual, written, auditory) that advance reflection on the self and others in a meaningful way”; and to “foster a safe and supportive environment for discussion of and exposure to many diverse perspectives on current issues and moral dilemmas faced by today’s students” (p.19). These goals reflected the cognitive approaches that Area III classes utilized to address the affective needs of gifted learners. That is, Area III is not merely a counseling session but an intellectual exploration that leads to greater self-understanding.

Four sample Area III lesson plans were included in this document. One lesson plan described having students take the Myers-Briggs personality tests, then having them create timelines of their lives that allow for thinking reflexively about their own lives. The combination of the test results and their timelines was intended to enrich the conversation
about the meanings and limitations of both. Another lesson addressed censorship and expression. In groups of four, students were to identify three words that authorities should eliminate from the English language. Then students were to jigsaw into different groups of four and discuss the recommendations of their groups’ four words. The last discussion would occur as a whole class and entail a discussion of “the nature of censorship, the connection between words and ideas, and the value of expression” (North Carolina Governor’s School, 2005, p. 21). This section of the document concluded with a caution about Area III’s need for sensitivity in the discussion of religion and sexuality, with guidelines given for making these open, safe topics for examination and reflection.

*North Carolina Department of Public Instruction website.* In the North Carolina Department of Public Instruction (n.d.) website’s description of the Governor’s School Curriculum, the outcome of Area III classes was stated as “to help the gifted student recognize his/her gifts and use them for the betterment of self and society” (Area III section, para. 1). In the description of Governor’s School East’s Area III classes, emphasis was placed on students’ assessing value systems and examining where their actions were inconsistent with their values. Socratic seminars were used as a method of ensuring that students’ voices were heard and encouraged as they examined current issues and problems in society and proposed possible resolutions. As one Area III product, each student, after researching an issue of individual concern, wrote a letter to the editor of a journal of their choosing, critiquing the issue and suggesting changes. Area III classes on the West campus were described as similarly structured, with honest, open discussion on topics such as race, censorship, government, education, personality, and family.
**Classroom observation.** During the fourth week of the 2012 five-week Governor’s School, a classroom observation was conducted during one 75-minute period of an Area III class. Due to the sensitive and personal nature of discussions in Area III, the site director and researcher agreed that the class would not be audio recorded, and only written notes would be taken to ensure students’ comfort and privacy. A total of 16 students were present in the class, seven males and nine females. Two students were Asian, one was African American, and 13 were White. All students arrived promptly. Initially students sat in desks facing the front of the class, but eventually were moved into a circle.

The instructor announced that they would be hearing from a musician about her own creative process in order to prepare them for their creativity project. The instructor then distributed index cards and asked students to write 5 pieces of information on them as if they were 10 years in the future. The information was to address the following:

1. Three adjectives that describe you best
2. Your occupation
3. How you spend your leisure time.
4. A motto that you live by.
5. Five more words to get across who you really are (10 years from now).

These cards were for use in an activity that took place at the end of the class period. There was an interlude in which a musician, another teacher who teaches Area III and was a 1998 Governor’s School English student, performed her original songs for the students. She briefly discussed her creative process. In reflecting on her own Governor’s School experience, she said, “Governor’s School is where I finally came into my own. I had 400
peers who encouraged me, and I’ve never really stopped. Governor’s School is a huge part of my musical journey.”

Next, students rearranged themselves into a circle based on how they labeled themselves in the following way:

- B – Believers
- A – Agnostics
- NB – Non-believers

They were then asked to talk respectfully about what they believed. All discussion was peer-to-peer. The first student to speak who had labeled herself a “believer,” sought to set the tone for safe, open sharing by asking, “What is the best way for us to tell you about what we believe?” A self-described “non-believer” responded, “Just that. Tell me what you believe but don’t tell me what’s wrong with me. I won’t tell you what’s wrong either.” From there, students were engaged in honest, respectful reflection about their own understandings of their religious beliefs. For example, a female student who chose to sit in the group of believers shared that she grew up in the church, and, in her words, “there are undeniable moments in my life where I am sure there is God. I can’t say that’s enough proof for anyone else, but it is for me. I do believe the only way to heaven is through Jesus Christ.” Another female sitting among those who claimed to be non-believers responded, “This is the first time I’ve ever said to a room of people I don’t believe in God. Don’t tell my parents. My dad is Jewish and my mom is Catholic. After we moved to Charlotte, I went through Bat Mitzvah and everything, and I felt guilty because I had realized earlier that when you die there’s nothing there. I still go to temple and consider myself Jewish, and I’m very influenced by
both views, but I don’t believe, and it doesn’t bother me.” One of the students who considered herself an agnostic, described her thinking in this way. “In the last few months, I’ve really thought about this a lot. I grew up in a Christian home. My mom is music director, and my dad finally decided he’s not God, so there must be one. I love traditions, and I participate in the church every Sunday, but I don’t want to have to make a decision yet. For right now, I’m going to continue going to church. I like the values and traditions.”

When the discussion ended, students asked if they could return to the topic later, expressing that they had much more to discuss. The instructor agreed that they could if they chose. Next, the instructor randomly redistributed the index cards that had been completed with five bits of information. Students were asked to write on the board, in a blocked space, the information on the card handed to them. Then they were allotted three minutes to read the information transferred from the index cards to the board. After three minutes, the instructor presented them with the following situation. “When you walked into the room today, you were exposed to a deadly disease. We can save only six of these people. Choose your six. It’s not for survival of the human race. It’s just for the survival of those individuals, but you must come to consensus as a group about the choices.”

When the students had made their six choices, the instructor asked them to discuss what their most important values seemed to be based on their choices, and if their choices were consistent with their discussions about their beliefs. He then requested that the six students represented by the chosen information would come forward. Students talked quietly among themselves, and seemed surprised about how they had prioritized their values during the activity as opposed to during their earlier discussion. The instructor reminded them that their
creativity project was due Thursday, and they would all present. Class was dismissed. Students were attentive and respectful of both their peers and the instructor throughout the class session.

**Student and alumni interviews.** In order to understand the perceptions of Governor’s School participants concerning the structure and the benefits of Area III classes over time, 13 alumni were interviewed about their Area III experiences, with their participation having spanned from the fourth year of the program, 1966, to the 49th year, 2011. In addition, ten students were interviewed during the fourth and fifth weeks of their 2012 Governor’s School experience. Descriptions of the ten 2012 students who were interviewed are provided in Table 3.2 and Table 3.3 contains information on the alumni who were interviewed. The data from these interviews were compared to document and observation data and analyzed in terms of the theoretical framework of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003).

Tucker attended Governor’s School in 1966 as a rising senior. Although she did not specifically remember which class was the Area III class, she did recount, “I do know that I became more aware of things about myself and how I think and what is okay to think and okay to explore, and not to do [simply] what other people told you to do.” Edward remembered sitting in a circle in his 1968 Area III class, but did not recall specifics about the discussion.

John also recalled the room arrangement from his 1973 Area III class. “We were in a standard classroom where the first thing the teacher did was to have us move all our chairs into a circle.” According to John, the profound effect of Area III for him resulted from the
readings and discussions. “That was my first exposure to Freudian concepts, which were pretty shocking in 1973, especially coming from a small town with no exposure to something like that. Area III made a big impression on me. I would describe it like an encounter session every day…. Instead of talking about the written materials, we talked about ourselves. It was great. I had never experienced anything like that. It opened me up in a lot of ways.” Jeffrey, a 1979 participant, also described the purpose and value of Area III classes. “It was to give us a place where we could talk about confusion, and fear, and uncertainty, and feeling out of place, and interacting with the other students. It wasn’t like group therapy, but it was where we could air confusion from the other courses. If you were confused in Area II, you could talk about that in Area III. In the long run, what I got out of Area III was as important as what I got out of Area I or Area II.”

Although John emphasized the discussion as centered on self-understanding, he still referenced the reading assigned in Area III. Likewise, Elizabeth, a 1985 math student, recalled a significant amount of reading associated with Area III. “We read at night; it was homework every night. It was school. You were there with people who wanted to learn and wanted to read. They don’t mind reading 100 pages every night.” Sarah recalled the ways in which Area III discussions challenged her “conservative views.” “At Governor’s School, touchy subjects (religion, politics) were brought up. Though I was shocked to hear the comments that many students made, I was glad that I was able to put to the test my beliefs and feelings that I had previously had. In my hometown, my conservative roots were never questioned.”
The 2012 students also described the value of Area III classes in shaping their values and opening their thinking, and contrasted these classes with their high school classes. Carsyn, a 2012 Area I natural science student, said that “throughout the conversations we have in Area III, you really learn the depth of people’s opinions, not [that] they are a Democrat or Republican, but the reasons why they believe. I think that people often put stereotypes around opinions, and at home you don’t get into these kinds of discussions, or anywhere else.” As an Area I math student from a small rural school, Vanessa also contrasted Area III classes with her high school instruction. Vanessa described Area III as “the emotional ride. It’s where you’re given situations that nobody in high school gives you because it’s just a no-no topic, such as talking about the bystander effect” In addition, like Sarah, Vanessa and Daphne reflected on how their Area III experiences had shaped their values. “That’s the goal of Area III, to learn about yourself, and learn about why you feel the way you feel and how other people cope with how they feel,” recounted Vanessa. Daphne added that “Area III really focuses on learning what you value, what qualities mean the most to [you].”

**Summary.** Area III classes were added in the second year of the Governor’s School Program to address the unique affective needs of academically gifted learners. These classes were discussion-oriented and used writings, resources, and activities to help Governor’s School students connect the ideas learned to greater self-understanding. Designed for academically gifted students, the Area III classes were found to be an inappropriate match for students identified only in the performing arts, and prompted a change in the qualification criteria for Governor’s School students who now must all qualify as academically gifted.
Data from the classroom observation and participant interviews verified the impact that Area III classes had on students’ self-understanding and thinking. Evidence from all sources indicated an emphasis in Area III classes on the second and third dimensions of the theoretical framework: higher order processing and the use of issues and themes that lead to interdisciplinary connections (VanTassel-Baska & Little, 2003).

**Overall Program: Student and Alumni Interviews**

Students interviewed during their 2012 experience and alumni dating back five decades from their experiences reflected on the profound benefits of Governor’s School in shaping their thinking and their understanding of the world and of themselves. Responses from interviewees reflected all three dimensions of the theoretical framework, the Integrated Curriculum Model (VanTassel-Baska & Little, 2003): 1) “emphasizing advanced content knowledge that frames disciplines of study” (p. 7); 2) “providing higher order thinking and processing” (p. 8); and 3) “focusing learning experiences around major issues, themes, and ideas that define both real-world applications and theoretical modeling within and across areas of study” (p. 8). At the conclusion of each interview, students and alumni were asked to arrange three abstract shapes, each depicting a dimension of the Integrated Curriculum Model, in a way that best represented their own individual experiences in Area I, Area II, and Area III classes. This process is outlined in the interview protocol (Appendix D). These three depictions were drawn only after the completion of other interview questions and responses so as not to introduce the language of the theoretical model to participants before they had described their experiences. Responses to this section were not coded, since the language of the framework was provided in the instructions. No one interviewed expressed
concern that the dimensions were irrelevant or inaccurate in describing the Governor’s School experiences. Although the drawings themselves were difficult to interpret, the verbal responses describing the drawings were insightful and have been incorporated into the data presented in this section. Discussed below are the themes from the theoretical framework, as well as themes that emerged from the data, concerning the overall program. Furthermore, the Codebook for Constant Comparative Analysis developed for this study is provided in Appendix G and a chart depicting the frequency of both a priori and emergent codes from all major documents, classroom observations, and student and alumni interviews is provided in Appendix H.

**Advanced content.** According to observations and interview data, the content addressed by the Governor’s School curriculum, especially in most Area I classes, was advanced and challenging, as reported by the struggle that students described and the lack of prior understanding observed in the classrooms. However, when describing the significance of advanced content, most participants envisioned advanced content, or the acquisition of facts, as the catalyst for thinking and exploring issues, but not as a major focus of the instruction. As John reflected on his 1973 experience when completing the abstract drawing of how the three dimensions related, “I don’t see advanced content as being more than an overall [arch] for advanced themes, advanced issues, and advanced ideas. If we were to think of [Governor’s School] as a classroom, the process would be the walls and the floor and the windows and the blackboard. Issues, themes, and ideas would be the air inside. The way I felt about the place was that you couldn’t help but think at a higher level.” That does not
mean that the content was easy, even for John. “I had to struggle with it. These concepts were not intuitive. They were appealing. It was a new world to me.”

**Higher level processes and products.** The critical and creative processes involved in all three types of classes became a reiterative theme among the interviewees. John, who had been a 1973 Area I social science student, described it in this way: “What made the Governor’s School summer program so special is that we were outside of the boundaries, outside of what we had to learn. We were working more on how to think and how to learn, rather than taking on a certain quantum of knowledge.” Samantha, a math student in 1986, also focused on the higher level processes involved. “I know I had to think more at Governor’s School than I did in my high school.” Carsyn, a 2012 natural science student, reflected on her overall experience. [At] Governor’s School as a whole, one thing I really like is that throughout every area, they ask you to question what you know, and explore every possibility, and it’s not like this is right. We have very difficult questions that people have pondered their whole lives, and we have five weeks when we explore every possibility.”

Another 2012 student, Sophie, discussed the emphasis on critical listening as well as questioning. “It’s not just hearing. It’s questioning and comprehending and taking it upon ourselves to hear what these people are saying.” Isabella, interviewed during her 2012 experience, reflected, “They have me thinking harder about a lot of things. It’s so much more open-ended.” Jeffrey described the curiosity that his 1979 experience instilled in him. “It opened up a hunger, an inquisitiveness into why things are the way they are.”

While critical and creative thinking as higher level processes played a major role, neither the Governor’s School’s written nor its implemented curriculum indicated an
emphasis on creating products. Although English students published a literary journal and students in all disciplines shared their research and learning through presentations and performances, developing lasting products was not described as a significant focus. Jeffrey even described the products of his 1979 experience as being “intellectually energized students.”

**Issues and themes.** The interdisciplinary nature and the focus on issues and themes were interwoven threads among participant responses concerning the benefits of the overall program. According to Darcy, a 2007 participant, “The real focus of Governor’s School is not to get you to be a specialist in science or art, but to get you to confront major themes and think about ways to confront them. Later on, when you have these abilities and tools, you can take the advanced content that you learn over the years and apply them.” Jeffrey discussed the emphasis on contemporary theory as an aspect of the issues and themes explored. “Theory is very big in Governor’s School. It’s all about theories of different things. So how do you come up with a theory of something that’s just an intellectual concept? You can’t see it, but you have to come up with a theory about it based on your beliefs or the knowledge you have about it.” The Governor’s School website (Department of Public Instruction, n.d.) reiterates this emphasis over time. “The Governor’s School curricular emphasis on contemporary thought in each discipline has proved successful for over 40 years. This central aspect of the program is continually praised by educators, students, and alumni” (Curriculum section, para. 5). As previously mentioned, a word count of the document *Opening Windows Onto the Future* (Lewis, 1968) confirmed this emphasis
by indicating that the most frequently used word was “theory,” used 94 times in the
document, with the second most frequently used word being “new” with 59 occurrences.

**Self understanding.** Numerous benefits related to self understanding were mentioned by
most alumni and 2012 students. The 2012 students often discussed their realizations that
they had been “big fish in little ponds” who were, during their Governor’s School experience,
with peers who shared their characteristics, aptitudes, and interests. For many, such as
Morgan, the initial experience was overwhelming. “Coming to Governor’s School for me has
also been a humbling experience. I met a kid who made 2390 on SAT. It makes you step
back and realize I really don’t know everything.” Carsyn followed up by discussing the
positive side of such a peer group. “Yeah, we are used to being the ones people come to.
But here, every single person asks for help from all of their peers. There are plenty of people
who come to help us; we’re all equal.” Likewise, Mary recounted that during her 1984
experience at Governor’s School “there was also a sense of belonging. When you’re in a
small school, there are not many people like you.” Isabella, interviewed during her
Governor’s School experience, expressed her concerns about returning to her rural school
and not having this peer interaction. As she succinctly stated it, “There is not much poetry
and language with going four-wheeling.”

There were also participants like Brynlee who were wrestling with the negative side of
having peers who shared their intellectual ability, especially in the math classroom. “I think
that maybe the reason I think I felt intimidated …was because I’m not used to not being the
smartest person in the room, and being in the room with other people who are as equal on
your level or higher than you, you’re just going to assume they know more than you, especially if you’re usually that person. It’s just frustrating.”

Of the alumni interviewed, many recalled experiencing both the frustrations and the joys of being with intellectual peers. Even DeeDee, who attended in the first year of the program, 1963, remembered having a similar response to Brynlee’s. “My feeling was that I was not so much the big fish I had been in high school in terms of participation, knowledge, having read the material. It was that I was in with peers that had something to offer.” Jeffrey echoed similar concerns about peers. “There are a lot of geeks at Governor’s School. They are thinking at a higher level, and few at their high school might be able to talk about the same things. If you did that back at your high school, people would look at you like you were crazy. At Governor’s School, in Area III, it’s not only that it’s just normal, but it’s necessary. You shouldn’t hide that in order to be accepted. You should learn how to be accepted by your peers in other ways, which is one of the things we learned in Area III, but hold on to these weird and crazy ideas and put them forth in a way that others can understand them.” As Edward described the impact from forty-five years ago, “I can tell you it was the best six weeks of my life. For the first time in my life had I been in a situation [in which], all of a sudden, I was around people who liked to read books, and liked to think, and liked to learn stuff.”

Two of the alumni interviewed were asked follow-up questions relating to their peers in their high schools and whether or not students not identified as academically gifted might benefit from the Governor’s School experience. Tucker, from 1966, when asked if the criteria should be changed to make the program accessible to everyone, said, “I do not think
you could do it randomly. I think they knew something of what they were doing about picking kids who would have the ability to lift themselves up to the challenge. I don’t think a lot of kids would stay.” Jeffrey likewise confirmed this. “If you’re not operating on an intellectual level the same as the academic students are, that’s going to be difficult for you. Their curriculum is designed around the fact that students will be able to operate at a level to understand the instruction.”

Many of those interviewed mentioned having been shy when they attended Governor’s School. Sally described having been timid before she attended Governor’s School, but gaining confidence when she confronted a peer whom she felt had unjustly criticized another participant. Jeffrey credits Area III class discussions with helping him overcome his shyness, a timidity that he believes was caused by having so few peers at his high school that understood him and could relate to him. Tucker described the impact of her 1966 experience on her confidence as a thinker. “You know how when a person has these ideas and wants to persuade people but is afraid to do it? It helped me find a voice. I was probably one of the meekest, but I went back with the knowledge that I could do it, and I got better over the years. I’m absolutely sure that capacity for listening to myself and throwing my ideas out there into the mix - I absolutely know that was influenced by Governor’s School.” Not only did Tucker overcome shyness as a result of her experience that summer, but she also mentioned the value of this confidence and the ability to be persuasive as a key factor in her success as a lawyer.

**College and career decisions.** In addition to Tucker, other alumni reflected on the influence that participation in Governor’s School had on their college and career decisions.
DeeDee, who participated in the first year of the program, 1963, credited her Governor’s School experience with getting her into the University of North Carolina at Chapel Hill in a year when women were not admitted except in the medical areas. Likewise, Mary, who has since completed law school, described the impact of the 1984 Governor’s School summer on her confidence to apply to college in the first place. “My parents graduated from high school in a mill town. I was the first one to go to college. When you don’t have anyone in your family who can tell you what college is like, Governor’s School was an, ‘Oh wow. I can do college, and do it well.’” John described the impact of his 1973 experience on his college decision. “There is no question in my mind that [my Governor’s School experience] helped me get into college out of high school. I can’t prove that, but I know it’s true. I was from a small mill town, but I got into [an Ivy League school] from there. There were only eight people from North Carolina there in my freshman class, and four of us went to Governor’s School the same year. I never would have applied there if not for Governor’s School, because I’d never heard of [that college].” For John, though, the road to success was not easy. As he recounted, he attended the Ivy League college for one year, dropped out, spent ten years working in a trade, then went back to college at night. In his early 30’s, however, he finished his undergraduate degree and completed law school, and has maintained a thriving law practice since.

Of the 14 alumni interviewed, all but three ended up in careers related to their Area I classes. Of the five from Area I English, three have taught English and two became lawyers. All three of the math alumni became teachers, two in math and one as a media specialist. Two of the natural science alumni were enrolled in college in an area of natural sciences at
the time of the interviews, and one pursued a career in computer science. One of the social science alumni became a lawyer, one was a social science graduate beginning her career in the field, and the last had multiple careers related to computers and teaching. David, having attended the 2001 Governor’s School in the area of English, entered a state university as a mechanical engineering and English double major. Although successful in his mechanical engineering courses, he found in the humanities the same passion that had been ignited at Governor’s School, and thus altered his path to major only in English. In his secondary English classroom where he was interviewed, quotations on the wall from his Governor’s School experience were displayed.

Presently working on her Ph.D. in a branch of science, Sally, who attended GS in natural science in 2003, reported that she employed the techniques that she learned at Governor’s School for organizing a research paper in her dissertation research. “My style as a student changed a lot after Governor’s School. I think I got more creative as a result of Governor’s School.” She also described the effects of the interdisciplinary nature of Governor’s School on her present role as a scientist. “I think of myself as a more holistic scientist now, I am more of an octopus borrowing from all different fields of science…. I think a lot of that interconnectivity really started in Governor’s School – even talking to students in other fields and realizing that science is affected by and dictated by social science [and] policy.” Many of the alumni, including Sally, stated that the Governor’s School did not necessarily determine their career because they were already interested in the field that they were studying in Area I.
Racial identity. Although only two alumni interviewed were African American and both attended in Area I English, their views contrasted starkly concerning the impact of Governor’s School on their racial identity as a part of their self understanding. One African American alumnus from a large urban high school, David, discussed the positive impact of the 2001 Governor’s School on his racial identity and college choices. “I think it influenced it positively, and part of the reason was, in high school, if you’re a minority and you’re taking advanced classes, there is a dearth of people who look like you. I took all honors and advanced courses, and there were few people who looked like me. If you were in the courses and you were doing well, you were talking white.” Although his parents had attended a historically-black college, David stated that after Governor’s School, he wanted to seek a college experience that offered greater diversity. “Governor’s School was very diverse, and having all of these different relations and backgrounds and races, it was much more accepting. There was no question that I was welcomed into that community.” However, for Vivian, an African American female from a rural community who attended in 2004 in Area I English, the opposite was true. Especially after a dramatic monologue in which students had chosen to use offensive racial language, she said that “honestly, when it came to the college choice, I knew I needed to go somewhere that I fit in better. There were about eight of us African Americans [at Governor’s School], and mostly girls. The percentage of African Americans on the faculty was more than in the students. We had some issues on race, so I chose a college where I would fit in.”
Summary of Findings.

The four primary program documents, six observations, and 32 interviews were coded using both *a priori* thematic and informational coding and inductive emerging coding using constant comparative analysis. Analysis was conducted in a systematic order beginning with the program documents, then interviews with key administrators and instructors, observations, and lastly, interviews with 2012 students and program alumni from the five decades. Codes were applied to a paragraph section or equivalent, not to an individual line or word, employing contingency analysis of attributes as described by Holsti (1969). The codebook in Appendix G provides further explanation of the coding. The theoretical framework of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003) was used to develop the thematic codes based on advanced content knowledge that frames disciplines of study, higher order thinking and processing, and major themes, issues and ideas as the organizing construct for making interdisciplinary connections. All three dimensions of the theoretical model were evident in all data sources. When asked at the completion of the interview to arrange the three dimensions, as represented by abstract figures, in a manner that depicted their relationship in Area I, Area II, and Area III, no participant expressed the absence of any one of these three dimensions in their Governor’s School experience. All viewed them as relevant and accurate descriptors of their three types of classes.

In Appendix H, Tables H.1, H.2, and H.3 provide depictions of the frequency of all codes appearing three or more times in the document review, observations, and interviews respectively. Portions of those tables are provided in Tables 4.6, 4.7, and 4.8 as they concern
the three dimensions of the theoretical model. Data from these tables are further discussed in Chapter 5.

Table 4.6

*Frequency of Codes for Advanced Content Knowledge*

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Note: Engl = English; SocSc = Social Science; NSci = Natural Science; Overall Curr. = Overall Curriculum
### Table 4.7

*Frequency of Codes for Higher Order Thinking/Processing*

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Note: Engl = English; SocSc = Social Science; NSci = Natural Science; Overall Curr. = Overall Curriculum
Table 4.8

*Frequency of Codes for Themes, Issues, and Interdisciplinary Approaches*

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Note: Engl = English; SocSc = Social Science; NSci = Natural Science; Overall Curr. = Overall Curriculum

Other themes and codes emerged from the data, and included the four themes concerning the structure of the curriculum and instructional approaches, development of the curriculum, benefits to participants, and changes over time. Under the theme of structure, the arrangement of the classrooms in a circular fashion for discussion was frequently mentioned among both 2012 students and alumni as shaping their experiences. Appendix H provides a frequency chart of all codes that appeared three times or more within each of these data sources: program documents, classroom observations, and interviews with 2012 students and alumni.

The data from the impact survey conducted by the North Carolina Governor’s School Foundation (2012) provided overwhelmingly positive responses concerning the influence...
that the Governor’s School experience had on participants’ lives. For the statement “GS had a positive influence on my life;” 99.4% (n=765) of respondents replied “Yes.” In responding to the statement “GS helped me get into college,” 94.7% (n=729) of alumni responded “Yes.” The ten students from 2012 and the 14 alumni interviewed for this study confirmed these lasting benefits. In describing her 2007 experience, Darcy said, “It was like the constant opening of doors to new ideas. If I had to imagine it as an artistic piece, it would be like one of those optical illusions where you are opening doors that then open other doors and it just never ends.” Sally referred to her overall 2003 experience as reaching “an intellectual event horizon.” Even during her 2012 experience, Daphne already had a sense of the effect of Governor’s School on her life. “It’s nice how Governor’s School doesn’t try to change you; they are just allowing you to change yourself.” Tucker, a female from a rural area who participated in the fourth year of the program in 1966 as an Area I English student, summarized the responses of many to the overall benefits of the Governor’s School experience. Forty five years after that summer, Tucker said, “I remember the way we approached everything that we were studying. If you viewed your academic career as looking through a kaleidoscope, this was like spinning that kaleidoscope.”
CHAPTER 5

Discussion

Purpose and Methodology of the Study

With 2012 being its fiftieth year, the Governor's School of North Carolina is the nation's oldest residential statewide summer program for academically gifted high school students. The purpose of this intrinsic qualitative case study was to examine how the Governor’s School’s curriculum and instructional approaches address the needs of secondary academically gifted learners. Rich, descriptive data included four major curriculum documents; six classroom observations in the 2012 Governor's School program; and interviews with ten 2012 students, 14 past participants from each decade, and eight key leaders including instructors, administrators, and curriculum reviewers. Constant comparative analysis of this data was used to better understand the Governor’s School’s curricular and instructional approaches and their benefits to academically gifted secondary learners in English, mathematics, natural sciences, and social science. The curriculum that was examined included the content area classes, or Area I classes, as well as the two interdisciplinary classes, Area II and Area III.

The overall theoretical lens used was the Integrated Curriculum Model (VanTassel-Baska & Little, 2003). This model has three major dimensions: 1) “emphasizing advanced content knowledge that frames disciplines of study” (p. 7); 2) “providing higher order thinking and processing” (p. 8); and 3) “focusing learning experiences around major issues, themes, and ideas that define both real-world applications and theoretical modeling within and across areas of study” (p. 8). These dimensions reflect the Governor’s School’s stated
aims: “to acquaint these future leaders with the latest theories and techniques in their chosen fields, introduce them to some of the present thorny problems in the field,” and “inspire them to creative activity on their own” (Lewis, 1968, p. 2).

**Discussion of Findings**

The discussion of the findings from this research are presented first in response to the primary question and secondly in answer to the three related secondary questions posed for the study. The primary, overarching question concerned how the curriculum and instructional approaches of the Governor’s School address the needs of secondary academically gifted learners. Answers to this question focus on the three aspects of the Governor’s School’s approaches that make it particularly unique: 1) instruction focused on theories, issues, and ideas; 2) enhancement of critical and creative thinking; and 3) a cognitive approach to addressing students’ affective needs as academically gifted learners.

However, merely examining how the Governor’s School addresses the needs of this population of students does not give a complete response to whether or not their approaches reflect best practices in gifted education, whether or not there are benefits to their approaches, or whether or not their approaches have remained consistent or changed over time. Answers to these secondary questions allow for wider applicability of the research to other contexts and broader implications for differentiated instruction for all academically gifted learners, for regular high school services for academically gifted learners, and for other special programs and Governor’s Schools for academically gifted learners.

**Primary Research Question:** How do the curriculum and instructional approaches of the Governor’s School of North Carolina address the needs of secondary
academically gifted learners?

The National Association for Gifted Children’s 2010 Pre-K-Grade 12 Gifted Programming Standards has provided guidelines for developing, implementing, and evaluating programs that address the needs of academically gifted learners. Within the Standards document, the evidence-based practices for “Standard 3: Curriculum Planning and Instruction” state that educators “design differentiated curricula that incorporate advanced, conceptually challenging, in-depth, distinctive, and complex content for students with gifts and talents” (p. 4) as well as incorporate critical thinking, creative thinking, and problem-solving processes. The Governor’s School of North Carolina’s curriculum and instructional approaches have reflected these practices in the following three overarching ways:

1) instruction focused on theories, issues, and ideas; 2) enhancement of higher order processes of critical and creative thinking; and 3) the use of cognitive approaches to address the affective needs of academically gifted learners.

**Instruction focused on theories, issues, and ideas.** From its inception, the Governor’s School of North Carolina defined its curriculum as emphasizing “contemporary theory,” or current theoretical concepts in the content areas, over the learning of facts or mere acceleration of content. The first document (Carter, 1965) promoted the emphasis on theory as addressing both the needs of gifted learners and the needs of society for developing future leaders. “Since theory must precede practice, there is a need for emphasis on theory in the education of leaders. Hence, it follows that one distinctive characteristic of a differential education for the gifted should be an emphasis on theory rather than on facts and practical applications” (p. 5). In the second publication, *Opening Windows onto the Future* (Lewis,
1968), the aim of Governor’s School was articulated in two “doctrinal postulates: (1) that theory for interpreting facts be emphasized rather than mere facts, [and] (2) that the theory emphasized should include the most up-to-date vanguard ideas that are stimulating innovational thinking in all areas of knowledge” (p. 14).

Based on the data from this study, the Governor’s School’s instructional program has remained faithful to the focus on contemporary theory throughout its fifty years. In the sixth year of the program when Opening Windows (Lewis, 1968) was written, the 44-page document used the word “theory” 94 times, and the second most frequently used word was “new” appearing 59 times. In the 29th year of the program’s operation, a curriculum review was conducted and entitled The Future of the Governor’s School: Results of a Faculty and Alumni Discussion Group (Gallagher, J., 1992, January). The following essential principles of the Governor’s School were affirmed: “1) No grades, 2) Theories and conceptual models, 3) Up-to-date theories, 4) Inspire creativity, 5) Introduce serious problems, 6) The interconnectedness of disciplines” (pp. 3-4). Also, in the Curriculum Review1996 (Foy, Caruso, Dusenbury, Hairston, Love, Milner, Sorkin, & Vorsteg) conducted by faculty members in the 33rd year of the program, the following statement again affirmed the need to maintain the original focus on contemporary theory as described in Opening Windows onto the Future (Lewis, 1968) based on the observed benefits of this approach to students and faculty.

The faculty wishes to strongly endorse the continued use of Opening Windows Onto the Future as the official program document of the Governor’s School. We believe that it has proven to be a highly successful model for 30 years…, inspiring students,
faculty, administrators, and educators from other states in ways not matched by any other educational model. (p. 2)

The 2005 Program Document (North Carolina Governor’s School, 2005) reaffirmed this need to “address revolutionary thought that overthrew assumptions in the 20th century, and is still being worked out today” (p. 14).

The commitment to “contemporary theory,” big ideas, and key issues as the curricular centerpiece of the instructional program stemmed from the match between this curricular approach and the needs of secondary academically gifted learners. Because these learners exhibit the “ability to handle abstractions, the power of concentration, and ability to make connections and establish relationships among disparate data” (VanTassel-Baska, 1989, p. 13), the construction of their learning around contemporary theory addressed these distinguishing characteristics while exposing these students to new concepts and information in their disciplines (Gallagher & Gallagher, 1994; Maker, 1982a). The heightened level of abstractness in academically gifted learners as compared with their age norms is further evidenced in the research related to the Myers-Briggs Type Indicator (MBTI). Academically gifted learners are more likely to be intuitive (N) types on the Myers-Briggs Type Indicator (MBTI), and, therefore, more likely than the normative population of their age peers to prefer opportunities for abstract reasoning and instruction centered on theory rather than fact (Hawkins, 1997; Cross, Neumeister, & Cassady, 2007).

However, the curriculum centered on theories, issues, and ideas required a faculty who were not only knowledgeable in their respective content areas, but also relevant in their understanding of the most recent theories and issues in their fields. As one of the program
site directors surmised, “We are asking everyone to teach the latest things, like the latest short story from *The New Yorker*. You don’t have a body of critical literature behind that.” The 2005 program document mentioned that “faculty are continually updating and changing the content of every course [and] considering the most recent developments in each field. So while our curricular structure remains constant, our content is constantly updated” (North Carolina Governor’s School, 2005, p. 8).

As evidence of the consistency between the written curriculum and the curriculum as it was experienced, alumni interviewed also described this curricular focus on theoretical concepts. Darcy, an Area I social science student in 2007, captured this emphasis well. “The real focus of Governor’s School is not to get you to be a specialist in science or art, but to get you to confront major themes and think about ways to confront them. Later on, when you have these abilities and tools, you can take the advanced content that you learn over the years and apply them.” Jeffrey summed up this focus by declaring that “theory is very big in Governor’s School. It’s all about theories of different things.” The Department of Public Instruction administrators even indicated that this emphasis on theory and the interdisciplinary nature of the program have created misunderstandings about the essence of Governor’s School. As one program administrator lamented, “That’s one of the greatest misunderstandings about Governor’s School. It’s not an academic program. It’s a scholarly program, but not about math and English and science…. It’s about how math and English and dance are related.”

The instructional approaches employed by the Governor’s School faculty in the examination of contemporary theories and issues included advanced content related to
cutting-edge thought and methodologies in each discipline, probing questions and discussions about ethical issues, and abstract thematic interdisciplinary connections among the content areas. These approaches will be examined further in the discussion of secondary questions.

**Enhancement of higher order processes of critical and creative thinking.** A second distinguishing feature of the Governor’s School’s curriculum and instructional program was its emphasis on the enhancement of critical and creative thought. The *Opening Windows* document (Lewis, 1968) specified that what they hoped to “develop and enhance is our pupils’ power to abstract, to conceptualize, to theorize” (p. 24). A significant portion of *Opening Windows* described what was known about creativity and the creative process by 1968. The 2005 program document reiterated that the Governor’s School’s intent was to “encourage students to become careful and critical thinkers” (p. 17). Likewise, 2012 students and five decades of alumni consistently addressed critical and creative thinking as one of the distinguishing elements of the Governor’s School instruction. John remembered experiencing this in his 1973 Governor’s School program. “What made the Governor’s School summer program so special is that we were outside of the boundaries, outside of what we had to learn. We were working more on how to think and how to learn, rather than taking on a certain quantum of knowledge.” In comparing Governor’s School instruction with that of her rural high school, Samantha, an Area I mathematics student in 1986, reflected, “I know I had to think more at Governor’s School than I did in my high school.” The research of Sriraman (2004) confirmed that “mathematically gifted students have the capability of intuitive reasoning, but that instruction that is direct and didactic may hamper their ability to
reason on their own.” The Governor’s School instruction sought to avoid this pitfall by challenging students toward the kind of thinking that modeled that of experts in the content areas.

One of the instructional strategies used frequently and effectively to cultivate critical and creative thinking at Governor’s School was the use of open discussion with students arranged in a circle, oval, or rectangle facing each other and the instructor seated as an equal member of that arrangement. Except for a brief and ambiguous reference in the 2005 Program Document to the faculty and students’ being “drawn into a common circle of learners” (North Carolina Governor’s School, 2005, p. 8), no program document mentioned the need to physically arrange the room in this manner. However, former participants consistently remembered these circular arrangements as both unique and as a significant catalyst for the development of trust and depth.

From 1963 in the first year of Governor’s School, DeeDee, recalled this arrangement in her English class. “I do remember that the class was in a circle. That was the first time I had ever sat in a circle for a class.” Tucker echoed this memory from her 1966 experience in English, describing the arrangement of discussion in a circle as the Socratic method. For Samantha in 1986, this was one of the most memorable distinctions from her prior experiences, even in Area I math classes. “The thing I remember most is that in my school we sat in rows, but in Governor’s School we sat in a circle, and it was more student-oriented and student-led than teacher-led.” As an Area I science student, Jeffrey vividly recalled the powerful effect of sitting in a circle in 1979. “We were generally in a circle, not in rows. Every class was an open discussion, not a lecture like you get in high school.” Two alumni,
John and David, described having had two of their three classes arranged in a circle but their Area II classes arranged in rows. While they could remember great detail about the two in a circle, they could not recall anything they had experienced in the Area II classes arranged in more traditional rows. Furthermore, the natural sciences and mathematics classrooms that were observed during the study were arranged in lecture style, and the instructors had to encourage students to participate and ask questions, unlike in the other four classrooms observed which had circular arrangements with more actively engaged students. Even when students were encouraged by the instructors to ask questions, discussion in the natural sciences and mathematics classrooms entailed student-to-teacher interactions, whereas in the other four classrooms most discussion was student-to-student.

The development of critical and creative thinking is one of the dimensions of the theoretical framework as well as one of the significant benefits of the Governor’s School to participants. Therefore, further discussion of these higher order processes are included in response to the first two secondary questions posed for this research. Not only was the enhancement of thinking a primary goal of the Governor’s School, but that goal aligns with best practices in gifted education and has proven beneficial to alumni even 50 years after participating in the program.

**Cognitive approaches to address affective needs.** A third unique element of the Governor’s School of North Carolina’s curriculum and instructional approaches was the intentional design of instructional experiences to address the distinct affective needs of academically gifted learners through cognitive methods. Rather than offering counseling sessions for those who might seek them, the Governor’s School developed curricular
experiences designed to enhance self-understanding. Area II classes, which involved students from every Area I content area, were “deliberately designed to confront gifted youngsters with the latest ‘way-out’ abstractions, generalizations, and theories that undercut the more fragmented *special disciplines*” (Lewis, 1968, p. 39). Because academically gifted learners are better able than their age peers to see and create patterns and concepts and to synthesize seemingly-unrelated information, an interdisciplinary course which makes connections across disciplines and focuses on issues and ethical dilemmas is appropriate differentiation (Maker, 1982a; VanTassel-Baska, 1989; Gallagher & Gallagher, 1994; Cohen & Kim, 1999).

Furthermore, after the first summer of the Governor’s School program in 1963, the faculty and staff recognized a need to address academically gifted students’ distinct affective characteristics. This need became especially apparent because these academically gifted learners were experiencing challenging curriculum and deep, thought-provoking discussions, many for the first time. However, rather than choose more traditional means of accomplishing this goal, such as optional counseling sessions, the Governor’s School faculty developed a curriculum that tied together the Area I content-specific classes and Area II philosophical examinations with an Area III emphasis on who these students were in relation to what they were learning. According to the first program report, Area III classes were added in 1964 as “curricular provisions designed to promote self-insight and personal development in understanding oneself and one’s relation to society” (Carter, 1965, p. 16).

The program developers were aware of the uniqueness of this cognitive approach to affective needs. “It is the first endeavor attempting an academic approach toward solution of
developmental problems of the intellectually superior, and it recognizes the depth to which the intellectually superior are concerned with questions related to the realm of personal development” (Carter, 1965, p. 102). Acknowledgement of this need reflected the more recent work of Bransford (2007) who proposed that “helping students learn to see how their thoughts, emotions, and behaviors are influenced by particular kinds of organizational and cultural settings seems to be extremely important” (p. 2).

Even 50 years later, this structure remained both unique and effective. Carsyn, Vanessa, and Daphne from the 2012 Governor’s School students elaborated on the difference between their Area III classes and their own high school experiences. They described the “emotional ride” of Area III classes, and the way that conversations allowed participants to accept not only that someone’s thinking is different from their own, but also the reasons underlying that thinking. As Vanessa summed it up, “That’s the goal of Area III, to learn about yourself, and learn about why you feel the way you feel and how other people cope with how they feel.” Jeffrey, from 1979, also described the value of Area III classes. “It wasn’t like group therapy, but it was where we could air confusion from the other courses. If you were confused in Area II, you could talk about that in Area III. In the long run, what I got out of Area III was as important as what I got out of Area I or II.” John likewise found Area III classes to be highly effective. “Area III made a big impression on me. I would describe it like an encounter session every day…. It was great. I had never experienced anything like that. It opened me up in a lot of ways.”

Therefore, the Governor’s School of North Carolina’s curriculum and instructional approaches addressed the characteristics that distinguish academically gifted learners from
their age peers through three overarching instructional approaches: 1) an emphasis on theories, issues, and ideas in all content area and interdisciplinary classes, 2) the enhancement of critical and creative thinking, and 3) the utilization of cognitive approaches for addressing the unique affective needs of these learners. Governor’s School alumni confirmed that these dimensions were unique compared to their own high school experiences, as well as appropriate to their needs. Further exploration of this overall research question is provided through discussion of the three secondary questions.

**Secondary Research Question 1:** How do the curriculum and instructional approaches of the Governor's School of North Carolina reflect best practices for the teaching of academically gifted learners?

A mere description of the Governor’s School of North Carolina’s unique curriculum and instructional approaches does not ensure that these approaches reflect what research has shown to be best practices in the field of gifted education. Therefore, the research-based theoretical framework of the Integrated Curriculum Model (VanTassel-Baska & Little, 2003) was used to examine whether the Governor’s School’s curriculum and instructional approaches employed defensible, well-founded practices. The three dimensions of the Integrated Curriculum Model are: 1) “emphasizing advanced content knowledge that frames disciplines of study” (p. 7); 2) “providing higher order thinking and processing” (p. 8); and 3) “focusing learning experiences around major issues, themes, and ideas that define both real-world applications and theoretical modeling within and across areas of study” (p. 8). These dimensions served as the basis for *a priori* coding of the four major primary documents; the transcripts of the observations in the 2012 classrooms; and transcripts of interviews with
eight key administrators and curriculum reviewers, two instructors, 14 alumni, and ten 2012 student participants. Discussions of the results are presented for each dimension. A codebook developed for this study provides a more thorough understanding of the codes and can be found in Appendix G. Three charts depicting the frequency of codes appearing three or more times within each data source are provided in Appendix H. The data presented in Table 5.1, Table 5.2, and Table 5.3 convey the frequency with which each theoretical code was alluded to in data sources in the order in which they were examined using constant comparative analysis: the review of documents, classroom observations, then interviews with students and alumni.

**Advanced content knowledge.** The first dimension of the Integrated Curriculum Model, the theoretical framework for this research, is “emphasizing advanced content knowledge that frames disciplines of study” (VanTassel-Baska & Little, 2003, p. 7). The four program documents, classroom observations, and interviews with alumni and 2012 students were coded using the *a priori* theoretical code of “AC” for advanced content. Data coded as advanced content included concepts with which participants reported struggling, topics that extended beyond the standard secondary curriculum, and materials that provided depth or complexity beyond the grade level. The frequency with which each code appeared in the data is depicted in Table 5.1, broken down by Area I, Area II, Area III classes and overall program descriptions.
As can be seen in Table 5.1, advanced content knowledge was alluded to frequently in the review documents, as well as in the interviews and observations. Of particular interest is the consistency with which the content areas of math and natural sciences reflected advanced content from all three data sources. This was less true in English and Social Science, in part because these curricular areas are not as definitively sequenced in terms of difficulty. However, alumni still referred to being exposed to content that went beyond what they had experienced in their high schools. During her 2012 Governor’s School summer, Carsyn said of the Area I natural science curriculum, “It’s hard; it’s very advanced.” Her peer in Area I social science, Sophie, echoed, “It’s very hard. I’ve heard terms I’ve never heard before.” Math students interviewed from all years reported being exposed to advanced content that was unfamiliar and highly abstract. In the math class observed during the 2012 Governor’s

### Table 5.1

**Frequency of Codes for Advanced Content Knowledge**

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<tr>
<td>AC (Advanced Content)</td>
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<td>14</td>
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<th>Math</th>
<th>SocSc</th>
<th>NSci</th>
<th>Area II</th>
<th>Area III</th>
<th>Frequency</th>
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<th>SocSc</th>
<th>NSci.</th>
<th>Frequency</th>
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<td>14</td>
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</table>

Note: Engl = English; SocSc = Social Science; NSci = Natural Science; Overall Curr. = Overall Curriculum
School, no student was volunteering easy answers, and all seemed to take notes and struggle with the concepts. Even in English, DeeDee expressed that in 1963, the first year of the program, “Paradise Lost was of course much more advanced.” Whereas advanced content is not the primary focus of the Governor’s School curriculum, it is evident in all curricular areas and data sources. Students and alumni consistently described experiencing content that was beyond their existing understandings, evidence that the content was reaching toward these academically gifted students’ levels of potential development as described by Vygotsky (1978).

**Higher order thinking and processing.** The second dimension of the theoretical framework for this study, the Integrated Curriculum Model, is described as “providing higher order thinking and processing” (VanTassel-Baska & Little, 2003, p. 8). Higher order thinking and processing are defined within the framework as critical thinking and elements of reasoning, creative thinking skills, research skills, and both tangible and oral products that reflect thinking. Some data that address this dimension have been previously discussed in answer to the primary research question because the Governor’s School curriculum incorporates higher order thinking and processing as a means of addressing the needs of academically gifted learners. However, in Table 5.2, the frequency of the higher order processing code for each of the data sources provides further insight into the presence of this dimension in the written and experienced curriculum.
Table 5.2

Frequency of Codes for Higher Order Thinking/Processing

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<td>8</td>
<td>8</td>
<td>13</td>
<td>14</td>
<td>11</td>
<td>72</td>
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<tr>
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<th>Math</th>
<th>SocSc</th>
<th>NSci</th>
<th>Area II</th>
<th>Area III</th>
<th>Frequency</th>
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</thead>
<tbody>
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<td>HP (Higher order processing)</td>
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<td>4</td>
<td>26</td>
<td>7</td>
<td>32</td>
<td>10</td>
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<table>
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<tr>
<th>Students and Alumni</th>
<th>Engl</th>
<th>Math</th>
<th>SocSc</th>
<th>NSci</th>
<th>Frequency</th>
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</thead>
<tbody>
<tr>
<td>HP (Higher order processing)</td>
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<td>13</td>
<td>14</td>
<td>13</td>
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</tbody>
</table>

Note: Engl = English; SocSc = Social Science; NSci = Natural Science; Overall Curr. = Overall Curriculum

As one of the distinguishing elements of the Governor’s School curriculum, higher order thinking and processes were evident in all data sources and in all curricular areas. Of particular interest was the extent to which it was pervasive within the coding of the observations, especially in social science and Area II and III classes. Although interviews were analyzed in the chart using the participants’ Area I subject areas, many mentioned the challenge to their thinking in Area II and III classes as well. In the 2012 interviews, Carsyn noted that “throughout every area, they ask you to question what you know, and explore every possibility.” One of the instructors described how she achieved this in social science. “I took the content that would build critical thinking skills and wove them together into a story.” Ashley, who was from a situation of poverty in a rural school and attended in 2011
Area I natural sciences, said that “critical thinking is what I remember the most. And we discussed, I mean, the things we discussed - there was really no right answer.” In Area II and III observations, higher order thinking was evidenced in both the questions asked by the instructor and the questions posed by the participants.

**Major themes, issues, and ideas.** The third dimension of the theoretical framework requires “focusing learning experiences around major issues, themes, and ideas that define both real-world applications and theoretical modeling within and across areas of study” (VanTassel-Baska & Little, 2003, p. 8). The core distinguishing characteristic of the Governor’s School curriculum and instructional approaches was its consistent, fifty-year emphasis on what it terms “contemporary theory.” This emphasis was embodied in the themes, issues, and ideas that were proposed and explored, as evidenced in the frequency of related codes from all data sources and in all content areas depicted in Table 5.3.

Within this theme was also the concept of interdisciplinary instruction which was assigned a separate code (IT-I). Although instruction in Area II and Area III classes was frequently interdisciplinary, the code was applied only if direct reference was made to the interdisciplinary nature of the curriculum. Data related to Area II and Area III classes from all sources reflected a heavy emphasis on issues, themes, and interdisciplinary instruction as depicted in Table 5.3.
Table 5.3

Frequency of Codes for Themes, Issues, and Interdisciplinary Approaches

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<td>23</td>
<td>112</td>
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<tr>
<td>Observations</td>
<td>Engl</td>
<td>Math</td>
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<td>Area II</td>
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<td>Frequency</td>
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<td>IT-I(Interdisciplinary)</td>
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<td>Students and Alumni</td>
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<td>SocSc</td>
<td>NSci</td>
<td>Frequency</td>
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<tr>
<td>IT (Issues/Themes)</td>
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<td>11</td>
<td>7</td>
<td>19</td>
<td>43</td>
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<tr>
<td>IT-I(Interdisciplinary)</td>
<td>5</td>
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<td>3</td>
<td>5</td>
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Note: Engl= English; SocSc = Social Science; NSci = Natural Science; Overall Curr. = Overall Curriculum

The emphases on issues, themes, and interdisciplinary approaches were alluded to in many different ways by alumni. As Darcy described her 2007 social science class, “the curriculum was grouped in these sort of thematic approaches. We would tackle one issue a week.” The descriptions of themes and issue-related instruction in the explicit written curriculum were reflected in observations of the implicit curriculum in the classroom, especially in Areas II and III. In her 2011 summer, Ashley reported that in Area II classes, “We discussed questions like, ‘What is living?’ For example if someone is in a coma, is that living? And we discussed other big questions.” During the observation of the Area II class, students discussed the origins of evil from their assigned positions – monotheism, polytheism, agnostic, and atheist. In the Area III class observed, students examined their
own religious beliefs and how they differed from the beliefs of others in the class in an open and respectful way, and then explored the values that they hold in relation to choices they make and the extent to which their values are shaped by their beliefs.

**Summary.** At the conclusion of each interview, students and alumni were asked to arrange three abstract figures representing the three theoretical dimensions in ways that depicted the relationship of those dimensions within Area I, Area II, and Area III classes. Interviewees chose many different arrangements, but not one individual indicated the absence of a dimension or the irrelevance of the terminology for describing the Governor’s School experience. Some believed that advanced content played a larger role in Area I, or that higher order thinking and processing was the overarching dimension for all three classes, but everyone used all three dimensions to depict their curricular experiences. These explanations were not coded, and therefore are not represented in the above figures, because the language of the dimensions was introduced by the researcher in the activity. This activity was done at the conclusion of the interview so as not to indicate that the researcher was looking for these terms. John, reflecting on the relationship of these three dimensions to his 1973 experience, summed it up by saying “if we were to think of it as a classroom, the process would be the walls and the floor and the windows and the blackboard. Issues, themes, and ideas would be the air inside. The way I felt about the place was that you couldn’t help but think at a higher level.”

Not only do the curriculum and instructional approaches of the Governor’s School of North Carolina clearly reflect all three dimensions of the theoretical framework provided by the Integrated Curriculum Model (VanTassel-Baska & Little, 2003), but they also address the
National Association for Gifted Children’s 2010 Pre-K-Grade 12 Gifted Programming Standards. The evidence-based practices for Standard 3 on “Curriculum Planning and Instruction” state that educators “design differentiated curricula that incorporate advanced, conceptually challenging, in-depth, distinctive, and complex content for students with gifts and talents” (p. 4) as well as incorporate critical thinking, creative thinking, and problem-solving processes. Through its emphases on contemporary theory, interdisciplinary instruction, and critical and creative thinking, the Governor’s School’s curriculum accomplishes all of these. In addition, the Area III curriculum employs cognitive and affective strategies consistent with Standard I from the National Association for Gifted Children’s 2010 Pre-K-Grade 12 Gifted Programming Standards: “Educators, recognizing the learning and developmental differences of students with gifts and talents, promote ongoing self-understanding, awareness of their needs, and cognitive and affective growth of these students in school, home, and community settings to ensure specific student outcomes” (p. 1).

In her synthesis of over 800 research studies and literature articles on curriculum differentiation from 1861 to 2007, Karen Rogers (2007) concluded that gifted learners need challenging, accelerated, fast-paced instruction, as well as the opportunity to work both independently and with other gifted learners. Evidence indicates that the Governor’s School of North Carolina’s curriculum and instructional approaches address these needs, with the exception of “fast-paced.” Fast-paced instruction is relative to the normal pace of instruction and is more relevant in a regular instructional program that utilizes a standard course of study and that represents a greater range of learners.
Secondary Research Question 2: What have been the benefits to participants of the curriculum and instructional approaches developed and implemented by the Governor's School of North Carolina?

Neither the description of the unique elements of the Governor’s School’s instructional program, as provided in answer to the primary research question, nor even the alignment of this description with research-based practices, as discussed above, ensures that participants benefited from the program. Nor does such a description indicate which aspects of the program proved most beneficial. Therefore, this secondary question addresses benefits to participants.

In this study, the documents reviewed and the alumni interviewed spanned the fifty years of the Governor’s School program. By interviewing alumni from 49 years of the program and students during the 50th year of the Governor’s School, both short-term and long-term benefits were examined. This long-term look allowed for the capture of benefits that would have been lost or different with a more short-term study. As Gold, Koch, Jordan, and Pendarvis (1987) found in their research on the Governor’s School of Georgia, responses of students immediately following the experience can be greatly different from the responses twenty years later when alumni can reflect on the most significant benefits. In addition, it was possible to document the influence of the Governor’s School experience on college and career decisions by interviewing five decades of alumni. Benefits to participants were categorized into three areas that parallel the responses to the primary research question: 1) instruction focused on theories, issues, and ideas; 2) higher order thinking and processing;
and 3) cognitive approaches to addressing affective needs which resulted in self-understanding and influenced college and career decisions.

**Instruction focused on theories, issues, and ideas.** The 2005 program document articulated the benefits of the Governor’s School’s focus on issue-driven, theory-based instruction. “The study of contemporary ideas has the effect of raising questions about basic assumptions of each discipline – exactly the kind of questioning which promotes creative solutions to long-standing problems…it has a mind-expanding effect that far surpasses simply learning facts” (North Carolina Governor’s School, 2005, p. 8). The Department of Public Instruction’s (n.d.) website likewise described these benefits. “The Governor’s School curricular emphasis on contemporary thought in each discipline has proved successful for over 40 years. This central aspect of the program is continually praised by educators, students, and alumni” (Curriculum section, para.5). Although Darcy came from an excellent high school and had college professors as parents, she reflected on the newness of the concepts she learned. “It was the first time I was involved in something that I was learning about new ideas and new perspectives that I had never thought about before….It was like a high. It was intellectual stimulation, and you come off of it but can’t stop talking about it. It changed my life.” When asked to describe the most memorable experience by the fourth week of Governor’s School, Erik, an African American male student in Area I natural sciences responded ,”We had all these crazy theoretical questions and our instructor would answer whether or not they were possible, or what would happen in that scenario. We read a few articles based on relativity. I think I really enjoyed the discussion, so that’s what I enjoyed the most.” Even when students and alumni did not make direct reference to
contemporary theories, they described the focus of the instruction on big ideas rather than facts, and reflected on how that focus challenged their understandings. Jeffrey, an Area I natural sciences participant in 1979, recognized the benefit of theories and issues as a way to stimulate creative thinking. As Jeffrey reflected, “Modern atomic theory, modern theories of genetics, Einstein’s theory of relativity, and origins of the universe - while those were the things that we were learning about, the subject material, it really wasn’t about those things. It was about using those things as a backdrop to teach you how to think in creative ways.”

Enhancement of higher order thinking and processing. Repeatedly both alumni and students experiencing Governor’s School described the effects of the classes on their critical and creative thinking and reasoning. Isabella, a 2012 natural sciences participant, said, “They have me thinking harder about a lot of things. It’s so much more open-ended.” Even 46 years later, Tucker, who attended in 1966, stated “there was something different that happened about the way that I was encouraged to think. Nobody had kept me from thinking before, but we were allowed to float through thinking about various things unlike what we did in our course curriculum at home.” Ashley came to Governor’s School from a family situation of dire poverty and homelessness in a rural area of North Carolina. She described her 2011 experience as transformative in terms of her own thinking. “Critical thinking is what I remember the most. And we discussed, I mean, the things we discussed - there was really no right answer.” Jeffrey described the effect that these discussions had on encouraging participants to critically analyze their thinking while debating their positions on an issue. “Sometimes you find that the reason you are supporting [a position] has no basis in reality - that it’s based in prejudice, preconceptions, things that you’ve always believed.”
Cognitive approaches to addressing affective needs. As previously discussed, the Governor’s School addressed the unique affective needs of academically gifted learners through cognitive approaches within the instructional program, particularly Area II and Area III interdisciplinary classes. This discussion-oriented approach allowed for open, honest exploration of beliefs, values, and abstract themes for conceptual development in Area II classes and personal development and self-insight in Area III classes. Almost all alumni interviewed described affective benefits of the Governor’s School experience that were related either to self-understanding or to their college and career decisions.

The most frequent benefit mentioned related to the self-understanding gained from being within a ‘new norm’ of other students who shared similar abilities and interests. Even 50 years after her 1963 experience, DeeDee reflected, “my feeling was that I was not so much the big fish I had been in high school in terms of participation, knowledge, having read the material. It was that I was in with peers that had something to offer.” Likewise, Mary declared that her 1984 Governor’s School summer afforded her a new sense of fitting in with peers in contrast to her high school experiences. “There was also a sense of belonging. When you’re in a small school, there are not many people like you.” Brynlee, during her 2012 summer at Governor’s School as an Area I mathematics student, found being with intellectual peers both beneficial and challenging. “I think that maybe the reason I think I felt intimidated like that was because I’m not used to not being the smartest person in the room, and being in the room with other people who are as equal on your level or higher than you, you’re just going to assume they know more than you, especially if you’re usually that person. It’s just frustrating.”
Many opponents of gifted programs in general or the Governor’s School in particular express concerns that such programs for academically gifted learners develop elitism by encouraging students to feel superior. However, the data from this study confirmed that providing these academically gifted learners with high level challenges, which these students had not experienced, and opportunities to work with others of similar ability allowed them to experience being within a new norm. Many were humbled by the experience, and not one interviewee in any content area expressed confidence in having been the smartest or best student at Governor’s School. Development theorist Charity James (1974) would explain this in terms of these adolescents’ being able to balance their need for separateness, which they experienced more frequently in their school environments, with their need for belongingness, which they experienced by being with academic and intellectual peers at the Governor’s School.

Additional benefits of the Governor’s School experience pertained to participants’ college and career choices. John credited his 1973 experience with his opportunity to attend an Ivy League school. “There is no question in my mind that it helped me get into college out of high school. I can’t prove that, but I know it’s true. I was from a small mill town, but I got into [an Ivy League school] from there.” Many of the alumni reported similar benefits to their college admissions or choices of majors. Vanessa and others among the 2012 students interviewed discussed their reconceptualization of their Area I content, which for Vanessa was mathematics, and the careers related to that content as a result of exposure to new possibilities. Interestingly, of the 14 alumni interviewed, all but three ended up in careers related to their Area I classes. David, an African American male who attended in Area I
English in 2001, even recounted having begun a major in mechanical engineering; but, after taking an English course and remembering his passion for the study of English, he switched to a humanities program. He is now teaching English at the secondary level, with quotations from his Governor’s School experience displayed on his classroom walls.

**Summary.** Both alumni and students recounted numerous benefits of their instructional experiences at the Governor’s School of North Carolina, particularly as they related to the emphases on theories, issues, and ideas; the development of critical and creative thinking skills; and the enhancement of self-understanding that shaped college and career decisions. These benefits paralleled the elements of the Governor’s School curriculum and instructional approaches that make the program differentiated and unique, as discussed in response to the previous two research questions. Many interviewees described the benefits of the Governor’s School experience by comparing it to their regular high school environments. The descriptions offered of their high school instructional experiences reflected earlier research conducted in North Carolina demonstrating that academically gifted learners do not feel challenged by their regular high school instructional programs until their junior and senior years (Gallagher, Harradine, & Coleman, 1997). However, Governor’s School students and alumni never blamed their high school faculties for the lack of challenge. As Sophie, a 2012 participant, described her high school, “We have fabulous teachers, but with the curriculum they are given, they have to rush through everything. You learn the tip of the iceberg. But here we’ll get the deep facts that go beyond that, then watch a film that goes even deeper.” Elizabeth, a 1986 Area I math alumna, joined others in noting differences in instructional strategies used at Governor’s School in comparison to her high school. She
described her high school math teachers as providing one method of solving each math problem; whereas the Governor’s School math teachers asked, “How can you get an answer and how did you get it? “ As previously mentioned, many noted the benefit of the open discussion enhanced by a circular arrangement that allowed participants and the instructor to engage in face-to-face interaction.

**Secondary Research Question 3:** How have the curriculum and instructional approaches for the Governor's School of North Carolina changed over time?

The changes that the Governor’s School of North Carolina experienced over its 50 year history were examined for two reasons. First of all, any changes made to the instructional program might shed light on approaches or practices that are not effective with academically gifted learners or proved harmful. Such information could have applicability to other programs which might propose to implement those abandoned approaches. Secondly, the lack of change would be as enlightening, indicating that practices have proven effective over 50 years. One of the most remarkable aspects of the Governor’s School’s curriculum is its overall consistency from its conceptualization in 1963 through 2012, especially in its emphasis on contemporary theories and issues, the development of critical and creative thinking processes, and its interdisciplinary component. However, the changes that have been made to the instructional program accentuate the lessons learned from the experiences of the faculty and administration.

The first significant change was the addition of Area III classes in the second year of the Governor’s School in 1964. Area III classes were described in the first program document as “the first endeavor attempting an academic approach toward solution of developmental
problems of the intellectually superior, and it recognizes the depth to which the intellectually superior are concerned with questions related to the realm of personal development” (Carter, 1965, p. 102). Addressing affective needs through cognitive instructional approaches was novel in 1964, and remains somewhat novel fifty years later. As has been discussed, the need for this class arose from the observation that the social and emotional needs of academically gifted learners, especially those involved in the intensity of the Governor’s School’s academic setting, should be addressed in an intellectual, interdisciplinary setting.

Secondly, changes concerning staffing of the interdisciplinary components of the curriculum, Area II and Area III classes, provided insight into broader issues concerning faculty and training for academically gifted programs. In the first two years of the Governor’s School, Area I content instructors taught Area II classes. For the first year, all instructors were given a 12-part curriculum. Changes made in the second year allowed each Area I content expert to select the components of the Area II class curriculum that best matched the individual instructor’s own expertise and were, therefore, more comfortable to teach. However, the faculty still did not feel confident teaching a discussion-oriented, issues-based, interdisciplinary Area II or Area III class. Therefore, by the third year of Governor’s School, changes had to be made in both the structure of Area II and Area III classes and the faculty. One faculty member was designated as the Area III coordinator, and graduate students were employed to work with him to develop the curriculum and teach the Area III courses. Likewise, Area II courses were taught by faculty designated for that purposed. The reality that not all faculty members were proficient or comfortable in teaching Area II or Area III classes, even though they were proficient in teaching their own content areas,
indicates that good teachers still need training in both the dispositions and the strategies required for interdisciplinary, complex, abstract instruction in order to be effective in fully implementing the dimensions of a quality program for academically gifted learners.

Third, because the curriculum for Area III classes was specifically designed to address the needs of academically gifted learners, changes had to be made in selection criteria for students in the Area I artistic content areas - instrumental and choral music, theatre, visual arts, and dance. These changes reflected the level of challenge of the Area II and Area III classes and the struggles that ensued when students in the performing arts were thrust into these classes. As a result, students identified in the arts for Governor’s School now must not only audition or submit a portfolio, but must also meet the requirements set forth for academically gifted learners. This change indicated that instruction appropriately differentiated for academically gifted learners might not be appropriate for all age peers.

Fourth, the element of choice was refined over the years. Initially, students were allowed to choose a specific theme within their Area I content areas. This choice proved to be artificial, as students chose groups for reasons other than genuine interest, such as which of their friends were going to a group or which groups of people looked interesting. Therefore, students were assigned to sections of a content area to achieve a balance within each group. Then within Area I, they were allowed to choose research topics, mini-lessons, or electives based on their interests. Choice is an oft-touted key component of differentiated curricula for academically gifted learners (Maker, 1982b; Gallagher & Gallagher, 1994). However, care should be taken to ensure that choices offered are authentic and aligned with students’ intense interests and passions.
Fifth, in 1978, the Governor’s School doubled its capacity from 400 students to 800 by adding a second campus. According to a site director, this change was precipitated by the insistence of school division superintendents that more students be allowed to participate as a result of the success of the program. Since 1978, two campuses have been used, although the number of participants vacillates for various reasons, mostly related to funding and tuition. This change further validates the effectiveness of the Governor’s School’s instructional program in addressing the needs of academically gifted learners.

Sixth, various changes have been made to the class schedules. Originally, Area I classes lasted for three hours each day. As the program evolved, administrators chose to offer Area I classes in 75-minute segments twice a day, once in the morning and once in the afternoon. This choice allowed for greater focus on the part of students during the Area I instruction and greater flexibility in the offering of elective topics during the afternoon sessions. Although one of the characteristics associated with academically gifted is a greater ability to concentrate when engaged in a subject (Gallagher & Gallagher, 1994; Mulhern, 2003; VanTassel-Baska, 1998), this change indicates that three-hour sessions proved less effective than two 75-minute instructional periods. Programs designed to differentiate for academically gifted learners need to balance the provision of longer periods of learning with the monitoring of students’ focus and engagement to find the right balance.

Other changes have been more closely related to the residential nature of the program, but have had an impact on the overall intellectual experience for students. For example, both the alumni association president and two site directors mentioned the addition of TAC’s (Teaching Assistant Counselors) who assist in both the classrooms and the residential life of
the students. Previously, counselors were graduate students or teachers who came to the Governor’s School in the evening when faculty left. Now, TAC’s and faculty, for the most part, remain on campus and experience the speakers and performances together with the students in the evenings. This change, as well as changes in the more holistic involvement of the faculty, has provided closer connections between the faculty and the students, and between the instructional and the residential programs. Many students and alumni commented on the value of these relationships, and the Governor's School’s success in creating what Thomas Jefferson envisioned as an “academical village” where students and faculty interact in a more seamless manner, making learning a more integral part of the total experience (Wilson, 1993). This change reflects the intentionality of the Governor’s School’s leadership in creating a holistic intellectual environment.

**Implications**

Far too much time and energy have been wasted in the past on attempts to justify differentiated instruction for academically gifted learners and defend it to well-intended proponents of equality. This research study provides data from historical documents, classroom observations, and interviews that confirm that the curriculum and instructional approaches that are designed to address the unique cognitive and affective needs of academically gifted learners are as appropriate for them as they are inappropriate for other learners of the same age. The discussion of the implications of this study is divided into three key issues: 1) implications for differentiated instruction for academically gifted learners; 2) implications for regular high school programs for academically gifted learners; and 3) implications for special programs for academically gifted learners.
Implications for differentiated instruction for academically gifted learners.

Findings from this study have broad implications related to the need for academically gifted learners to receive differentiated instruction. Robert Yin (2009) proposed analyzing data based on “theoretical propositions, rival explanations, or descriptive frameworks” (p. 162). In Chapter 2 of this study, three possible rival explanations or arguments were presented. The data from this study were used in the following discussion to respond to these rival or alternative arguments.

**Argument #1.** “All children are gifted; therefore, academically gifted learners are not different from other learners.”

The observations in the six classrooms portrayed secondary students who think with high levels of complexity, depth, and abstractness. Not only their answers, but also the questions that they posed, indicated a desire to examine meaningful, philosophical concepts that offered little closure and to struggle with complex ethical issues. Interview responses from both 2012 students and alumni who had participated over the five decades confirmed that these Governor’s School participants seldom had peers in their home environments who thought on their levels of abstractness, depth, and complexity. Likewise, they described having few peers who were interested in having discussions like those they experienced at Governor’s School. As Isabella from the 2012 program stated it, “There is not much poetry and language with going four-wheeling.” Like Isabella, other students and alumni described a disconnect between the interests of their peers at home and their own intellectual interests. They did not indicate a perception that these differences made them better than, but simply different from, their age peers.
In comparing their Governor’s School experiences to their home high school environments, students and alumni never criticized the lack of quality of their faculty and often praised their high school teachers. However, they emphasized that they have little opportunity to interact with others who share their need for abstract, complex thought and discussion. Jeffrey recalled these differences from his 1979 experience. “There are a lot of geeks at Governor’s School. They are thinking at a higher level, and few at their high school might be able to talk about the same things. If you did that back at your high school, people would look at you like you were crazy. At Governor’s School, in Area III, it’s not only that it’s normal, but it’s necessary.” No interviewed student from the 2012 program or alumnus from any decade described being similar to all of the students in the home high school, but instead noted that the Governor’s School was the first environment in which everyone thought on a similar level. For some who felt that they qualified for Governor’s School on the fringes, this was a struggle. Sarah, Vanessa, and Vivian all had difficulty keeping up with their peers in this environment and sometimes felt uncomfortable being a part of discussions.

**Argument #2.** “Differentiated curriculum for the academically gifted is just good teaching for every learner. All classrooms should provide the same kind of instruction to all students.”

Both the explicit curriculum as written in the documents and the implicit curriculum as observed in the classrooms and reported in interviews (Eisner, 1979) reflected content and instructional strategies that were distinctly different from a regular secondary instructional program. Of the 2012 students interviewed, all had taken at least one Advanced Placement
or college-level (for those in early college high schools) course in their high schools, and several had taken as many as six in the previous year. However, students reported that even those courses differed greatly from Governor’s School courses. The content at Governor’s School they described as more advanced, abstract, and complex, with no student indicating that the content in the classes was already familiar. As Brynlee stated, “all my math classes are very intimidating because none of it is algebra or calculus. It’s more abstract. It’s math by theorem, not like what you would consider a normal high school math class.”

Math was not the only Area I content area in which the curriculum was challenging. John, an Area I social science student from 1973, stated that “I had to struggle with it. These concepts were not intuitive. They were appealing. It was a new world to me.” Not only was content differentiated to address the differing needs of academically gifted learners, but also the ways in which the content was delivered. Tucker shared her memories about the instructional strategies from her 1966 experience as an Area I English student. “The instructor just had lots of different ways to get us to look at themes and, I don’t know if he used the Socratic method, [but] it was the first time I had seen it.” All students and alumni described distinct differences between the classes at Governor’s School and courses in their high schools.

When asked if students should be selected randomly to attend Governor’s School, Tucker, from 1966, responded, “I do not think you could do it randomly. I think they knew something of what they were doing about picking kids who would have the ability to lift themselves up to the challenge. I don’t think a lot of kids would stay.” Jeffrey likewise confirmed this. “If you’re not operating on an intellectual level the same as the academic
students are, that’s going to be difficult for you. [The Governor’s School] curriculum is
designed around the fact that students will be able to operate at a level to understand the
instruction.”

An early change in the student selection process for Governor’s School is one of the
strongest pieces of evidence that addresses whether other students would benefit equally
from the Governor’s School instruction and curriculum. Initially, students who attended
Governor’s School in the arts (instrumental or choral music, visual arts, theatre, or dance)
were selected by audition and school recommendations. They did not have to be
academically gifted or submit any test data. By the second year of Governor’s School in
1964, distinct differences were noted between the appropriate match of the curriculum and
the needs of students identified in Area I academic areas versus those students in Area I
artistic areas, particularly in relation to instruction in Area II and III interdisciplinary classes.
The first attempt at adapting to address these differences was to provide a separate Area III
class for students in the artistic areas. While the students identified as academically gifted
participated in a level of seminars that were “geared toward interpretation and theorizing
about attitudes society holds in relation to the intellectual” (Carter, 1965, pp. 105-106), the
students in the artistic areas in their Area III classes took a “less academic approach in the
areas of conformity and frustration” (p. 105). The first program document of the Governor’s
School then explains the need for these differences. “As is perhaps obvious, the Area III
staff was faced with adapting the ‘Self and Society’ course to a group of people for whom it
was not designed, e.e., the students not selected on the basis of intellectual superiority” (p.
106). The program staff wrestled with these differences for several years before changing
the criteria for identifying students in Area I arts to require that they be both academically
gifted and artistically gifted. This dilemma faced early in the program’s history
demonstrated that the curriculum that was designed as appropriate for academically gifted
learners was also inappropriate for other age peers, even those identified as gifted in the arts.

This conclusion was similar to the findings from the Coleman (2005) study of a
residential gifted program and the Sparks (2011) study in which students who barely
qualified for an academically gifted program did not show significant academic improvement
because their needs were not well matched to the program’s services. The goal of instruction
for all learners should be to provide appropriate challenge within each student’s zone of
proximal development (Vygotsky, 1978) or potential for growth. As Nel Noddings (2009)
stated, “not only do we fail to educate children along lines congruent with their natural
equipment, but we insist that natural differences are so minimal that all children can profit
from the education once reserved for a few” (p. 429).

Argument #3. “Summer programs for gifted learners cannot create a significant
difference because they do not last long enough and are not different enough from the regular
instructional program.”

A survey administered and compiled by the North Carolina Governor’s School
Foundation in February of 2012 attained responses form 770 Governor’s School alumni. For
the statement “GS had a positive influence on my life,” 99.4% (n=765) of respondents
replied “Yes.” In responding to the statement “GS helped me get into college,” 94.7%
(n=729) of alumni responded “Yes.” Furthermore, interviews with five decades of alumni
provided solid evidence that the Governor’s School of North Carolina, lasting from five to
eight weeks depending on the year, provided significant change in the ways that participants saw themselves, their learning, and their futures. Reflecting on her 1966 experience and its influence on her career as a lawyer, Tucker said, “I’m absolutely sure that capacity for listening to myself and throwing my ideas out there into the mix, I absolutely know that was influenced by Governor’s School.” Sally discussed the impact that her 2003 experiences continue to have on her present graduate school studies. “My style as a student changed a lot after GS. I think I got more creative as a result of Governor’s School.”

Edward’s 1968 summer at Governor’s School continued to shape his societal understandings, political activism, and relationships 44 years later when interviewed. “Without it, [the Governor’s School experience,] I don’t know what I’d be. Would I hate people? Would I be a racist? You can see how I look back on that. It really changed my life, and in probably many other ways that I don’t know.” DeeDee credited her 1963 Governor’s School summer for getting her admission to the University of North Carolina at Chapel Hill when it was admitting females only to medical programs. These reflections from alumni of the program, dating back to the program’s origins, are indicative of the permanent, life-changing impact that a summer program for academically gifted learners is capable of generating, even in the brief span of five to eight weeks. Forty-five years after her summer at Governor’s School, Tucker said, “I remember the way we approached everything that we were studying. If you viewed your academic career as looking through a kaleidoscope, this was like spinning that kaleidoscope.”

**Implications for regular high school instruction.** The examination of the curriculum and instructional program of the first and oldest operating Governor’s School for
academically gifted learners in the United States has applicability (Gall, Gall, and Borg, 2007) for other Governor’s Schools as well as for regular instructional programs. In her examination of past studies of Governor’s School programs, McHugh (2006) presented the following conclusions:

Findings from existent studies show that Governor’s Schools are beneficial to students’ academic, social, and emotional well-being. These findings are significant because they can be used as guides to improve current Governor’s Schools and as supportive evidence for implementing Governor’s Schools in states without such programs. In addition, they can point to an effective program model for gifted and talented secondary students.

(p. 184)

While this research was an intrinsic case study specific to one program over time, some of the understandings gleaned from the research have applicability to regular instructional programs for secondary students. The innovative nature of the Governor’s School curriculum developed in 1963 and focused on contemporary issues and theories in each of the content areas has withstood the test of fifty years of practice and scrutiny through curriculum reviews from experts both inside and outside of the Governor’s School. Alumni from all five decades consistently remarked on the value that the related readings, discussions, and content provided to their intellectual development and self understanding. No participant inferred that the Governor’s School content duplicated what they had already been taught or already knew.

By contrast, research on the experiences of high school academically gifted learners in North Carolina indicated that these students seldom encountered material that they did not
already know until Advanced Placement or International Baccalaureate classes, which were usually experienced only in the junior and senior years (Gallagher, Harradine, & Coleman, 1997). Therefore, three implications for how regular high schools can better address the needs of academically gifted learners are proposed from the research: 1) the need for advanced, issues-driven, theory-based instruction that develops higher order thinking; 2) the value of interdisciplinary connections; and 3) the use of cognitive strategies to address the affective needs of academically gifted learners.

**Advanced, issues-driven, theory-based instruction.** Issues-driven, theory-based instruction for academically gifted learners is intended to provide an understanding of both historical context of a discipline and its evolving ideas and contributions. Such instruction ignites a passion for further study for many capable learners, as was evidenced in this research through the connection between Area I content areas of alumni and their chosen careers. Students who see the interesting and innovative developments in a field of study are more likely to be enticed to shape that discipline’s epistemological beliefs and understandings. The Governor’s School curriculum portrays every content area as vibrant and evolving rather than as a long list of stagnant facts from ancient contributors. Issue-driven instruction invites students to wrestle with the conflicts and complexities that surround new understandings and contexts. Open discussion with other high-end learners in a psychologically-safe environment is necessary to fully examine the alternative views of every issue. The data from this study affirm the use of Socratic discussions with students sitting in a circle, oval, or rectangle as having significant impact on thinking and retention. The hope is that these academically gifted learners will some day contribute to new,
contemporary concepts and theories. Curriculum and instruction that fit these descriptions is possible in a regular high school program beginning in the freshman year. Rather than offering only advanced content and only in classes beginning the junior year in Advanced Placement classes, high schools should provide advanced, issues-driven, theory-based instruction that challenges academically gifted learners at all grade levels and in all content areas.

**Interdisciplinary connections.** The second implication for regular high school programs from this research relates to the need for interdisciplinary instructional approaches for secondary academically gifted learners. In the United States, secondary schools are designed to address one content area at a time, seldom making connections across disciplines. Two known exceptions to this practice exist. In fully-developed secondary Paideia programs, English language arts study is integrated with social sciences using Socratic seminars as a common feature. In International Baccalaureate (IB) Programs, a course entitled “The Theory of Knowledge” is required of all IB graduates and examines the epistemological development of knowledge and understandings across content areas. However, these two programs are seldom a part of a regular secondary school’s offerings.

Academically gifted students have a distinct need to see and create patterns and an innate ability to perceive more unusual relationships (Gallagher & Gallagher, 1994; Maker, 1982a). A curriculum that creates more abstract connections among the disciplines and encourages insights from one field to another develops creative minds that become prone to seeking solutions to complex problems in complex ways. As stated in the review of the literature, “shaping course work around integrated themes inspires students to find personal meaning in
their study by allowing them to generate their own observations, inquiries, and investigations, paralleling the processes performed by specialists in the field” (Johnsen, 2012, p. 229). Now that one of the greatest constraints to interdisciplinary instruction, standardized assessments (O’Steen, Cuper, Spires, Beal, & Pope, 2002), is being transformed by the Common Core Standards into a more integrated approach to measuring mastery, an interdisciplinary approach in a regular secondary instructional program for academically gifted learners is a viable possibility. However, whereas all students need to make integrated, topical, concrete connections, academically gifted learners demonstrate an intense need for abstract, thematic connections across disciplines (Gallagher & Gallagher, 1994; Hawkins, 1997; VanTassel-Baska, 1998; Mulhern, 2003; Cross, Neumeister, and Cassady, 2007). This can occur within the departmentalized content areas of a regular high school only if the faculty teaching academically gifted learners are trained in the related dispositions and strategies.

**Cognitive strategies that address affective needs.** The third implication of this study for regular high school programs for academically gifted learners points to the use of cognitive strategies to address the affective needs of academically gifted learners. As has been stated previously, the affective needs of gifted learners, because of the asynchronous nature of their physical and intellectual development, heighten their awareness of the differences between themselves and their age peers. This heightened awareness can lead to tendencies toward perfectionism, depression, and stress (Webb, Meckstroth, & Tolan, 1994; Rice, Leever, Christopher, & Porter, 2006). Secondary schools should reassess every structure to seek opportunities for engaging academically gifted learners in the open exchange of ideas to
challenge their thinking, in the examination of new understandings beyond their existing levels of mastery and abstraction of thought, and in the enhancement of their understanding of themselves, others, and their role in the world.

However, more is at stake than simply helping academically gifted learners feel better about themselves. As has been demonstrated in the research, there is a connection between performance goal orientation and academic success (Gottfried, Cook, Gottfried, & Morris, 2005), and little connection between motivation and academic strengths (McCoach & Siegle, 2003). In other words, academically gifted learners are not always motivated to perform in the regular school setting because the goal for performance is usually grades, something they attain with little effort. They need to be given the opportunity to learn for the joy of learning, as at the Governor’s School where there is no grading system. Furthermore, Eddles-Hirsch, Vialle, Rogers, and McCormick (2010) concluded, schools that purposefully address the social and emotional needs of academically advanced students create a more positive social context in which students better demonstrate their academic ability. Rather than offering optional counseling services, the Governor’s School has demonstrated that this need can be addressed through instructional strategies that both challenge and support academically gifted learners.

**Summary.** All three of these implications require that faculty members be trained in restructuring and delivering curriculum and instruction appropriate to academically gifted learners. In its first years, the faculty of the Governor’s School of North Carolina proved extremely competent when teaching in their content areas, but uncomfortable and ineffective when required to teach in the interdisciplinary, issues-driven Area II and Area III classes.
This problem was resolved by having separate faculty for Area II and Area III classes. However, in regular high school programs, it would need to be addressed by having faculty members trained in the necessary skills for constructing and delivering a differentiated curriculum for academically gifted learners. Even in departmentalized, content-driven high schools, all three of these implications are possible to attain at all grade levels.

**Implications for special programs for academically gifted learners.** Because the Governor’s School of North Carolina has a fifty year history and has remained open to examination and change over time, lessons gleaned from its documents, key leaders, alumni, and students, as well as observations in the classrooms, offer implications for other special opportunities, summer programs, and Governor’s Schools that address the needs of academically gifted learners. These implications are discussed in three sections: 1) the choice of curricular focus; 2) the incorporation of strategies to address the affective needs of academically gifted learners, and 3) the intentionality of program design and offerings.

**Choice of curricular focus.** Whether offered as summer, weekend, or regular academic year programs, a curricular program designed for academically gifted learners is usually focused on acceleration, special interests, or some other form of enrichment. Accelerated programs frequently provide instruction that allows students to complete a year-long course in less time or to complete a college course while in high school. Special interest programs provide self-selected sessions or courses on a topic of interest such as oceanography or Civil War strategies. Enrichment programs take many different approaches, including exposure to many topics and in-depth study of issues. However, the Governor’s School of North Carolina provides an interesting combination of advanced content without requiring mastery
for accelerated credit, the incorporation of student interests in Area I content areas and research topics, and enrichment through issues-driven, interdisciplinary discussion. Other special programs for academically gifted learners need to examine the balance that is most effective within these purposes for content design within their own programs.

**Affective needs of academically gifted learners.** The second implication for other special programs for academically gifted learners concerns the need to address the affective issues unique to these learners. When in the first year the faculty became aware of the affective needs of academically gifted learners during their Governor’s School experience, instructional approaches were employed to address those needs. Peer-to-peer discussions in all classes encouraged students’ confidence in original thinking, openness to the thinking of others, and greater self-understanding through interaction with other academically gifted learners. Issues explored allowed students to examine their own beliefs and thinking. Challenging, advanced content experienced for the first time by students often overwhelms a student and causes that individual to doubt strengths and abilities. Research-based strategies need to be implemented to address these concerns, particularly in an environment where students are more homogeneously grouped and can more openly address their affective needs with others who share their experiences and characteristics.

**Intentionality of program design and offerings.** The third implication from the research for other special programs for academically gifted learners concerns issues of intentionality. Intentionality implies both an intentional design and the more ancient understanding originating with Greek philosophers concerning the connection between what we see and how we perceive it. The Governor’s School of North Carolina provided a model for
intentional planning and design that re-evaluated the instructional program’s effectiveness on an on-going basis and used every opportunity to address the unique cognitive and affective needs of academically gifted learners. When the schedule, staffing, or curriculum did not match the needs of the learners, changes were made. The content itself was changed every summer to address the most current issues and theories, both within the Area I content area courses and the Area II and Area III interdisciplinary courses. Readings and activities were carefully selected to encourage rich, deep thinking. Rather than provide more typical adolescent extracurricular experiences, such as trips to shopping centers or movies for entertainment, the Governor’s School sought to utilize every opportunity to focus on its mission by showing movies that challenged students’ thinking and incited interesting discussions and by providing field trips to a rare books collection or a medical research center. In his 1961 text on gifted education which influenced the design of the original Governor’s School curriculum, Dr. Virgil Ward referred to this intentionality by stating “that the curriculum should consist of economically chosen experiences designed to promote the civic, social, and personal adequacy of the intellectually superior individual” (p.102). By continually reassessing what worked, seeing and perceiving the curriculum anew, the Governor’s School maximized the use of the time and resources provided to challenge and nurture academically gifted secondary learners over its 50-year history, as evidenced through both survey and alumni interview data.

**Summary.** Data examined in this study indicate the profound impact that well-founded differentiated instructional experiences can have on academically gifted learners. Based on alumni interviews, the data further point to the lack of such experiences in the regular
secondary instructional programs in North Carolina. This research on the Governor’s School of North Carolina clearly affirms the need for secondary academically gifted learners to receive appropriate challenges through advanced content that addresses abstract concepts and theories; through engagement with similar learners that develops higher order critical and creative thinking, and self-understanding; and through the interdisciplinary examination of issues and themes that have real-world connections and model authentic problem-solving. These needs should be addressed within both regular instructional secondary programs and other special programs for academically gifted learners.

**Recommendations for Future Research**

Too little is known about what works effectively with advanced and academically gifted secondary learners. McHugh (2006) points out that “there is an absence of large-scale, well designed studies that examine the short- and long-term effects of participation in a Governor’s School on students’ social and emotional well-being. The research to date is limited, and furthermore, no studies on Governor’s Schools have been conducted within the last decade” (p. 185). While this study sought to address this gap, far more research is needed to understand the multitude of issues related to secondary academically gifted learners as well as programs like the Governor’s School.

First, more longitudinal data is needed to examine the long-term effects of special programs and instruction designed to meet the needs of academically gifted learners. The examination of benefits to alumni who participated in Governor’s School as many as 50 years ago provided a more accurate picture of the lasting value of the experience and the college and career changes impacted by the experience. Furthermore, benefits that are
reported in the short-term often differ from those reported in the long-term. For example, in
the survey of students at the Governor’s School of Georgia (Gold, Koch, Jordan, &
Pendarvis, 1987), students indicated that the friendships and social interaction with
intellectual age peers were the greatest benefits when surveyed immediately after their
program experience. However, twenty years later, the same individuals ranked the academic
classes and impact on career choices as the greatest benefit of the program. Likewise, as
earlier described, if evaluating the program’s success by the successful careers of
participants, an examination of John’s life ten years after his Governor’s School experience
would have described him as a college dropout rather than the successful attorney that he
became by age 32. Longitudinal data, both quantitative and qualitative, would allow a more
thorough and accurate depiction of the benefits and impact of the curriculum and
instructional approaches.

VanTassel-Baska and Stambaugh (2008) proposed that the following questions be asked
to evaluate curriculum designed for academically gifted learners:

1. What are the patterns of growth in students in the areas that the gifted program
   focuses on?

2. What are the predominant instructional strategies used by teachers of the gifted to
deliver a differentiated curriculum?

3. What evidence exists that the curriculum is appropriately tailored to the needs of
gifted learners?

4. What is the relationship of the gifted curriculum to the standard one?

5. What are stakeholder perceptions about the efficacy of the curriculum?
6. What evidence exists that gifted learners are academically successful when they leave the school district and beyond?

7. What evidence exists that gifted learners are receiving appropriate affective counseling differentiated for their unique needs? (p. 360)

The research on the Governor’s School’s curriculum and instructional approaches addresses five of the seven questions. However, other research is needed to address the patterns of growth in students, particularly in the Area I content areas, and the level of academic success that students experience after a program like the Governor’s School of North Carolina.

Secondly, large-scale, well-structured studies need to be designed to compare the effectiveness of three different but frequently-advocated instructional program designs for academically gifted learners: those that focus on acceleration of content, those that offer instruction on topical interests such as archaeology, and those like the Governor’s School curriculum which provide complex, interdisciplinary instruction.

Third, research needs to examine the positive and negative effects of providing curricular and instructional experiences designed for academically gifted learners to non-gifted age peers. Such research would better inform decision makers about what strategies work best to challenge all learners, and what strategies address differing needs of academically gifted learners. Fourth, many of the 2012 students and alumni described the powerful effect of the arrangement of the classroom in circles or rectangles for the purpose of shared discussion. More research needs to be done on the impact that this classroom arrangement has on retention, understanding, and relationships among students and instructors. Fifth, the data point out that not all high quality teachers with expert content knowledge are competent or
comfortable teaching interdisciplinary, issues-driven classes. Research is needed to examine the dispositions and skills that should be sought and developed in teachers to prepare them more adequately for utilizing these approaches.

Lastly, the effect of a Governor’s School experience on racial identity needs to be further explored. Because no informational data were available on the race or socioeconomic level of Governor’s School alumni or students, such a study was difficult. Only one of the 2012 students and two of the alumni interviewed were African American, but the very different perceptions of the two alumni point to a need for further study. Similarly, research should examine the impact on students who attend Governor’s School from low socio-economic backgrounds. One alumna interviewed had attended Governor’s School from a situation of recent homelessness and credited her Governor’s School experience, as well as her high school faculty, with providing her with the vision and confidence to attend an Ivy League college where she had enrolled for the fall.

With such a large population of alumni who have experienced the Governor’s School of North Carolina across 50 years, in excess of 33,000 individuals, further research should be done on the longitudinal impact of the experience on participants. Both quantitative and qualitative research methods are necessary to understand fully what works effectively with these learners and why.

Summary

Too much time has been invested by educators in debating whether or not academically gifted students have differing needs and whether or not those needs should be addressed. Fears over issues of equity have paralyzed educational systems from providing challenges for
every learner. As Spielhagen and Brown (2008) stated, “nothing seems to polarize group value systems in education more than discussion of the needs of gifted students” (p. 374). Yet non-educators recognize more readily the need to develop the intellectual resources and abilities of all students. The National Research Council (2010), the National Science Foundation (2010, May 5), the National Research Council (2010) and even agricultural economic analysts (Artz, 2003; Howley, Rhodes, & Beall, 2009) have insisted that for our country to survive economically, it has to develop its human capital and intellectual potential, especially of students with unusually high aptitudes. Therefore, discussion should center on what works to accomplish this goal. Yet, secondary services for academically gifted learners, consisting mostly of general courses designated as honors, Advanced Placement, and International Baccalaureate, have received little research as to how or if they have met the needs of academically gifted learners (Gallagher, 2001). According to Hertberg-Davis and Callahan (2008), “the development of services and curriculum for gifted students of high school age has been relatively neglected, and not surprisingly, little research has been conducted on the effectiveness of the few options that do exist” (p. 199).

An examination of the Governor’s School of North Carolina’s curriculum, developed five years after the launch of the Russian Sputnik I and implemented with few changes for over fifty years, provides insight into what works with secondary academically gifted learners. Interviews with alumni from five decades likewise confirmed that the curriculum and instructional approaches provided challenge and shaped the thinking of participants long after their summer experiences. Although it was created when little was known about the distinguishing characteristics and needs of academically gifted learners, the curriculum and
instructional approaches developed through the Governor’s School of North Carolina aligned with the Integrated Curriculum Model (VanTassel-Baska & Little, 2003) and reflected what Howard Gardner (2008) outlined as the five minds needed for the future: the disciplined mind, evidenced at the Governor’s School through Area I content area classes that expose students to advanced content; the synthesizing mind, experienced by Governor’s School students through interdisciplinary connections; the creating mind, encouraged through the use of higher order thinking and processing; the respectful mind and the ethical mind, directly addressed through the cognitive approaches to affective development that involve wrestling with complex issues, beliefs, and ideas. For these students with the potential to contribute greatness to their communities and to shape the future for society, the development of these five minds is of paramount importance. This research on the curriculum and instructional approaches of the Governor’s School of North Carolina in its fiftieth year of implementation provides many answers to what works with secondary academically gifted learners.
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APPENDICES
APPENDIX A

Steps for Constant Comparative Analysis of Governor’s School of North Carolina’s Curriculum for Academically Gifted Secondary Learners

THEORETICAL FRAMEWORK: INTEGRATED CURRICULUM MODEL

FOUR PRIMARY DOCUMENTS:
1) The Governor’s School of North Carolina; Staff Report, 1963-1964-1965
2) Opening Windows Onto the Future: Theory of the Governor’s School of North Carolina, 1968
3) The North Carolina Governor’s School Program Document, 2005
4) North Carolina Department of Public Instruction (n.d.). Exceptional Children Division: Governor’s School of North Carolina

INTERVIEWS WITH KEY PLAYERS

INTERVIEWS WITH 2012 GOVERNOR’S SCHOOL STUDENTS

CLASSROOM OBSERVATIONS

INTERVIEWS WITH GOVERNOR’S SCHOOL ALUMNI FROM FIVE DECADES

1. Comparison between documents from different time periods within each discipline/Area.
2. Comparison between documents and interviews with key players.
3. Comparison between documents and classroom observations.
4. Comparison within interviews in each discipline (math, English, natural science, social sciences).
5. Comparison across disciplines among interviews, observations and
APPENDIX B

INFORMED CONSENT FORM for RESEARCH

Title of Study: A Differentiated Curriculum for Secondary Gifted Learners: The Development, Structure and Benefits of the Governor's School of North Carolina's Approach

What are some general things you should know about research studies?
You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to choose not to participate or to stop participating at any time. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher named above.

What is the purpose of this study?
The purpose of this research study is to gain a comprehensive understanding of the curriculum and instructional strategies employed with academically gifted secondary learners during the fifty-year history of the Governor's School of North Carolina.

What will happen if you take part in the study?
You will be interviewed about your involvement in the North Carolina Governor's School, particularly about your views and experiences regarding the curriculum and instructional practices of the Governor's School.

Duration of the Study
The researcher will be conducting interviews over a six-month period of time. However, your involvement will be with a one-time interview lasting approximately 15 - 30 minutes (or up to 60 minutes for administrators), unless you and the researcher agree to a follow-up interview or communication for further clarification.

Risks
Caution will be taken to keep your identity confidential. Pseudonyms will be used, and data stored as described below. No other risks are foreseen. If at any time you feel uncomfortable participating in this study, you should let the researcher know immediately and discontinue participation. All interviews with students will take place in a public area.
Benefits
Because the benefit of this study is to provide a better understanding of the effects of the Governor's School's curriculum on academically gifted learners, it is hoped that the indirect benefit will be improved differentiated curriculum for such learners. No other direct benefits will be provided to participants.

Confidentiality
The identity of the participants in the study will be kept in confidence. Student participants in the pilot study will be assigned pseudonyms, and identified in study notes by gender, subject area of participation, region of North Carolina, race/ethnicity, and rural/urban nature of their base school. The pseudonym will be used during the interview so that all recorded data cannot be identified with the individual student. Likewise, interviews with past participants will be coded with a pseudonym and corresponding data to identify the individual's role, but not the individual's identity. Interviews with program instructors, administrators and key players will be coded to identify the role the individual played and the time period in which that individual was involved in the Governor's School, as well as the campus on which he/she was involved, without revealing the identity of the individual. Campuses will be assigned pseudonyms that distinguish them, but not as the presently-designated East and West campuses, or by the names of the colleges. Contact information for participants, such as e-mail addresses of alumni interviewed, will be kept in a password-protected file separate from any written or digital data. Transcripts of interviews will be completed by a transcription service, but no identifying data will be included.

Consent To Participate
“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time.”

Participant's signature ___________________________ Date ______________

Investigator's signature ___________________________ Date ______________

Parent Permission for Student Participation (for participants under the age of 18)
"I have read and understand the above information. I agree for my child to participate in this study with the understanding that my child may withdraw at any time.”

Parent Signature ___________________________ Date ______________
APPENDIX C

RECRUITMENT MESSAGE FOR GOVERNOR'S SCHOOL ALUMNI

Dear ____________:

As a doctoral student at North Carolina State University, I am conducting my dissertation research on the curriculum and instructional practices of the North Carolina Governor's School over its fifty-year history. I would be grateful if you would allow me to conduct an interview with you about your experiences. The interview will be conducted in person, and focuses only on your impressions of the benefits of the instructional program. I anticipate that the interview should take no more than 30 minutes.

Your name and identifying information will be kept confidential. You will be assigned a pseudonym that will be used during the recorded interview, or used on the transcript of the e-mails. Only information concerning your academic area at Governor's School, the size and regional location of your high school, your race, your gender, and your year of participation will be correlated to your interview data. For those who participated after two campuses were established, a pseudonym will be used throughout the study to designate the campus on which you participated with designations other than East and West or the names of the college campuses.

Please let me know if you are willing to participate. I will accept this as your written consent. Thank you for considering being a part of this study. I would be most grateful for your time.

Sincerely,
APPENDIX D

INTERVIEW PROTOCOL

Sample Interview Questions for Students at 2012 Governor's School of North Carolina:

1) Describe the instruction and curriculum in each of your major classes:
   a) Area I (your discipline)
   b) Area II
   c) Area III

2) How are the curriculum and instruction in each of these classes different from the curriculum and instruction in your home high school?
   a) How many AP/IB/Honors classes did you take last year? How are they different from Governor's School classes?
   b) How many AP/IB/Honors classes does your school offer?

3) What has been the most memorable learning experience in these classes so far and why? How would you describe the content and teaching methods in your classes?

4) How would you arrange these three descriptors of curriculum - advanced content, process/product, issues/themes - in terms of their importance in describing your three main classes at Governor's School (your Area I discipline-specific class, and your Area II and Area III interdisciplinary classes)?

   "Arrange these shapes in a way that they reflect the Governor's School curriculum.

Think about which is the biggest, which has a relationship to another, and what that relationship is."
Sample Interview Questions for Faculty Members at Governor's School of North Carolina:

1) What is your teaching experience at Governor's School and elsewhere?
   a) How long have you taught and in what settings?
   b) How long have you taught at Governor's School?
   c) How often have you taught academically gifted students outside of the Governor's School setting?

2) Describe the instruction and curriculum in each of the classes you teach:
   a) Area I
   b) Area II
   c) Area III
   d) What is provided to you as a description of what the curriculum and instruction should be?

3) How do you think that the curriculum and instruction in each of these classes differ from the curriculum and instruction in the students' home high schools based on your experiences and perceptions?

4) What has been the most memorable teaching experience in these classes so far and why?

5) What qualities make a student successful in Governor's School classes and why?

6) How would you arrange these three descriptors of curriculum - advanced content, process/product, issues/themes - in terms of their importance in describing Area I, Area II, and Area III classes?
   "Arrange these shapes in a way that they reflect the Governor's School curriculum. Think about which is the biggest, which has a relationship to another, and what that relationship is."

[Diagram of shapes labeled Advanced Content, Process/Products, Issues/Themes/ideas]
Sample Interview Questions for Alumni of Governor's School of North Carolina:

1) Describe the instruction and curriculum as you remember them from each of your major classes:
   a) Area I (your discipline)
   b) Area II
   c) Area III

2) How were the curriculum and instruction in each of these classes different from the curriculum and instruction in your home high school?

3) What was the most memorable learning experience in these classes and why?

4) How would you arrange these three descriptors of curriculum - advanced content, process/product, issues/themes - in terms of their importance in describing your Area I, Area II and Area III classes?
   "Arrange these shapes in a way that they reflect the Governor's School curriculum. Think about which is the biggest, which has a relationship to another, and what that relationship is."

[Diagram showingADVANCED CONTENT, PROCESS/PRODUCT, ISSUES/THEMES/IDEAS]
Sample Interview Questions for Key Administrators and Curriculum Developers of Governor's School of North Carolina:

1) Describe your role with Governor's School of North Carolina and the years of involvement.

2) Describe the instruction and curriculum in Area I, Area II, and Area III classes.

3) How are the curriculum and instruction in each of these classes different from the curriculum and instruction in students' home high school based on your experiences and perceptions?

4) How was the curriculum of the Governor's School developed? What changes have occurred in this curriculum, and why were those changes made?

5) How would you arrange these three descriptors of curriculum - advanced content, process/product, issues/themes - in terms of their importance in describing Area I, Area II, and Area III classes?
APPENDIX E

INFORMED CONSENT FORM for RESEARCH OBSERVATIONS

Title of Study: A Differentiated Curriculum for Secondary Gifted Learners: The Development, Structure, and Benefits of the Governor's School of North Carolina's Approach

What are some general things you should know about research studies?
You are being asked to take part in a research study. Your participation in this study is voluntary. You have the right to choose not to participate or to stop participating at any time. You are not guaranteed any personal benefits from being in a study. Research studies also may pose risks to those that participate. In this consent form you will find specific details about the research in which you are being asked to participate. If you do not understand something in this form it is your right to ask the researcher for clarification or more information. A copy of this consent form will be provided to you. If at any time you have questions about your participation, do not hesitate to contact the researcher named above.

What is the purpose of this study?
The purpose of this research study is to gain a comprehensive understanding of the curriculum and instructional strategies employed with academically gifted secondary learners during the fifty-year history of the Governor's School of North Carolina.

What will happen if you take part in the study?
The researcher will observe in your classroom and digitally record the audio from your class during the 2012 North Carolina Governor's School. The transcription of the recording will be done by the researcher and not shared with anyone else. The study focuses on how the curriculum and instructional practices of the Governor's School reflect the written curriculum.

Duration of the Study
The researcher will be conducting observations over the duration of the 2012 Governor's School Program. However, your involvement will be with a one-time observation during your regularly-scheduled class. If you teach both Area I and Area II or III classes, a one-time observation may be conducted in each of those Area classes.

Risks
Caution will be taken to keep your identity confidential. Pseudonyms will be used, and data stored as described below. No other risks are foreseen.
Benefits
Because the benefit of this study is to provide a better understanding of the effects of the Governor's School's curriculum on academically gifted learners, it is hoped that the indirect benefit will be improved differentiated curriculum for such learners. No other direct benefits will be provided to participants.

Confidentiality
The identity of the participants in the study will be kept in confidence. Teachers in the pilot study will be assigned pseudonyms, and identified in study notes by the course taught and the pseudonym used to designate the Governor's School site. The pseudonym will be used during the interview so that all recorded data cannot be identified with the individual student. Interviews with program instructors, administrators and key players will be coded to identify the role the individual played and the time period in which that individual was involved in the Governor's School, as well as the campus on which he/she was involved, without revealing the identity of the individual. Campuses will be assigned pseudonyms that distinguish them, but not as the presently-designated East and West campuses, or by the names of the colleges. Contact information for participants, such as e-mail addresses of alumni interviewed, will be kept in a password-protected file separate from any written or digital data. Transcripts of interviews will be completed by a transcription service, but no identifying data will be included.

CONSENT TO PARTICIPATE
“I have read and understand the above information. I have received a copy of this form. I agree to participate in this study with the understanding that I may withdraw at any time.”

Participant's signature_______________________________ Date _________

Investigator's signature_______________________________ Date _________
APPENDIX F

COVER LETTER FOR 2012 GOVERNOR’S SCHOOL STUDENTS IN PILOT STUDY

A doctoral student from North Carolina State University, Linda Robinson, is conducting a pilot study for her dissertation related to the Governor’s School curriculum. She would like to interview a sampling of students, and your name is in that sample. You may choose not to participate now or at any time in the future. Your participation will constitute one 15-30 minute interview conducted in a public place at Governor’s School and related to the curriculum. Questions include the following:

1. Describe the instruction and curriculum in each of your major classes:
   a. Area I
   b. Area II
   c. Area III

2. How are the curriculum and instruction in each of these classes different from the curriculum and instruction in your home high school?

3. What has been the most memorable learning experience in these classes so far and why? How would you describe the content and teaching methods in your classes?

Your actual name will not be used in any reports. You will choose a pseudonym that will represent you.

If you are willing to participate, please read, sign, and have your parents sign the enclosed Informed Consent Form and return it Monday, July 9, to your Area I teacher. Also complete the section below and return it.

Thank you so much for considering being a part of this research.

Name: _________________________________________________________

Area I Class and Instructor: ________________________________________

Time and location that I am available for a 15-30 minute interview:
APPENDIX G

CODEBOOK FOR CONSTANT COMPARATIVE ANALYSIS

<table>
<thead>
<tr>
<th>CODE</th>
<th>SOURCE</th>
<th>QUOTATION</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC</td>
<td>D-R-44</td>
<td>theoretical science as opposed to applied science is emphasized in the science program.</td>
</tr>
<tr>
<td>AC</td>
<td>D-R-102</td>
<td>The student is to increase his knowledge of the dynamics of personality through study of motivating forces</td>
</tr>
<tr>
<td>AC</td>
<td>I-N-2012</td>
<td>It’s hard; it’s very advanced.</td>
</tr>
<tr>
<td>AC</td>
<td>I-M-2012</td>
<td>Yeah, all my math classes are very intimidating because none of it is algebra or calculus. It’s more abstract. It’s math by theorem, not like what you would consider a normal high school math class.</td>
</tr>
<tr>
<td>AC</td>
<td>I-E-1963</td>
<td>Paradise Lost was of course much more advanced.</td>
</tr>
<tr>
<td>PP</td>
<td>D-R-40</td>
<td>A more creative process of mathematical thought</td>
</tr>
<tr>
<td>PP</td>
<td>D-P-17</td>
<td>Encourage students to become careful and critical thinkers</td>
</tr>
<tr>
<td>PP</td>
<td>I-N-2012</td>
<td>throughout every area, they ask you to question what you know, and explore every possibility,</td>
</tr>
<tr>
<td>PP</td>
<td>I-M-1986</td>
<td>I know I had to think more at Governor’s School than I did in my high school</td>
</tr>
<tr>
<td>IT</td>
<td>D-P-17</td>
<td>Exploit the opportunities offered by contemporary thought and deflect or solve the problems that come as a consequence.</td>
</tr>
<tr>
<td>IT</td>
<td>D-W-Area 1</td>
<td>Emphasize contemporary texts, compositions, artistic expressions, issues, ideas and the theories that flow from them.</td>
</tr>
<tr>
<td>IT-I</td>
<td>I-S-2012</td>
<td>I really like the integration in the curriculum.</td>
</tr>
<tr>
<td>S-CHO</td>
<td>I-S-2012</td>
<td>We have time to look up our own facts and choose what we want to know.</td>
</tr>
<tr>
<td>S-CIR</td>
<td>I-M-1985</td>
<td>I think I remember that everything was in that crescent shape. Lots of discussion, interaction, everybody’s thoughts, everybody’s processes valued, that kind of thing.</td>
</tr>
<tr>
<td>B-HS</td>
<td>I-S-2012</td>
<td>We have fabulous teachers, but with the curriculum they are given, they have to rush through everything. You learn the tip of the iceberg. But here we’ll get the deep facts that go beyond that, then watch a film that goes even deeper.</td>
</tr>
<tr>
<td>B-U</td>
<td>I-N-2012</td>
<td>Coming from a small hometown, I’m used to being a big fish. This has been good for me.</td>
</tr>
<tr>
<td>B-C</td>
<td>I-M-2012</td>
<td>I got mathematical modeling, and it’s really cool to put numbers to a situation, but at the same time, can you put numbers in a life situation. This shows you the easy and hard, the ups and downs. It allows whether you want to study that in the future.</td>
</tr>
<tr>
<td>B-II</td>
<td>I-M-2012</td>
<td>Area II is like a mind game...It’s about not getting mentally comfortable. Emotionally we’re comfortable, but you have to think, it was, did you look at all sides of the story? Did you think about what else could be? A lot of us pride ourselves on thinking outside the box, but the box is very big!</td>
</tr>
</tbody>
</table>
APPENDIX H

FREQUENCY OF CODES FOR EACH DATA SOURCE

Table H.1

Frequency of Codes for Document Review

<table>
<thead>
<tr>
<th>Themes/Codes</th>
<th>Engl</th>
<th>Math</th>
<th>Soc Sc</th>
<th>N Sci</th>
<th>Area II</th>
<th>Area III</th>
<th>Overall Curr.</th>
<th>Frequency</th>
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<td>72</td>
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<td>PP (Process/Product)</td>
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<td>8</td>
<td>8</td>
<td>13</td>
<td>14</td>
<td>11</td>
<td>72</td>
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<td>PP-P (Products)</td>
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<td>1</td>
<td>2</td>
<td>1</td>
<td>0</td>
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<td>IT (Issues/Themes)</td>
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<td>9</td>
<td>21</td>
<td>16</td>
<td>23</td>
<td>112</td>
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<td>1</td>
<td></td>
<td></td>
<td></td>
<td>7</td>
</tr>
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<td>D-H (Development-History)</td>
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<td>D-P (Development-Purpose)</td>
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<td>S (Structure)</td>
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<td>S-CHA (Characteristics)</td>
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<td>3</td>
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<td>S-CHO (Choice)</td>
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<td>S-G (Grades)</td>
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<td></td>
<td>3</td>
</tr>
<tr>
<td>S-I (Instructional Strategies)</td>
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<td>23</td>
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<td>S-M (Materials)</td>
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<td></td>
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<td>S-TS (Trips/Speakers)</td>
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<td></td>
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Note: Engl = English; SocSc = Social Science; NSci = Natural Science; Overall Curr. = Overall Curriculum
### Table H.2

**Frequency of Codes for Observations**

<table>
<thead>
<tr>
<th>Themes/Codes</th>
<th>ENGL</th>
<th>MATH</th>
<th>SOC. SC</th>
<th>NSCI</th>
<th>AREA II</th>
<th>AREA III</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td>AC (Advanced Content)</td>
<td>2</td>
<td>3</td>
<td>23</td>
<td>3</td>
<td></td>
<td></td>
<td>31</td>
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<tr>
<td>HP (Higher Processes)</td>
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<td>4</td>
<td>26</td>
<td>7</td>
<td>32</td>
<td>10</td>
<td>86</td>
</tr>
<tr>
<td>HP-P (Products)</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>3</td>
</tr>
<tr>
<td>IT (Issues/Themes)</td>
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<td>3</td>
<td>27</td>
<td>3</td>
<td>39</td>
<td>8</td>
<td>86</td>
</tr>
<tr>
<td>IT-I (Interdisciplinary)</td>
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<td>3</td>
<td>1</td>
<td></td>
<td>8</td>
</tr>
<tr>
<td>S-I (Instructional Strat.)</td>
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<td>2</td>
<td>9</td>
<td>1</td>
<td>4</td>
<td></td>
<td>17</td>
</tr>
<tr>
<td>S-CIR (Circle)</td>
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<td>1</td>
<td>1</td>
<td>1</td>
<td></td>
<td>6</td>
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</tbody>
</table>

Note: Engl= English; SocSc = Social Science; NSci = Natural Science; Overall Curr. = Overall Curriculum
### Table H.3

**Frequency of Codes for Student and Alumni Interviews By Content Area**

<table>
<thead>
<tr>
<th>Themes/Codes</th>
<th>ENGLISH STUDENTS</th>
<th>MATH STUDENTS</th>
<th>SOC. SC. STUDENTS</th>
<th>NSCI. STUDENTS</th>
<th>FREQUENCY</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>AC</strong> (Advanced Content)</td>
<td>4</td>
<td>14</td>
<td>8</td>
<td>16</td>
<td>42</td>
</tr>
<tr>
<td><strong>PP</strong> (Process/Product)</td>
<td>5</td>
<td>13</td>
<td>13</td>
<td>13</td>
<td>44</td>
</tr>
<tr>
<td><strong>PP-I</strong> (Interdisciplinary)</td>
<td>5</td>
<td>3</td>
<td>3</td>
<td>5</td>
<td>16</td>
</tr>
<tr>
<td><strong>PP-P</strong> (Products)</td>
<td>4</td>
<td>2</td>
<td>1</td>
<td>2</td>
<td>9</td>
</tr>
<tr>
<td><strong>IT</strong> (Issues/Themes)</td>
<td>6</td>
<td>11</td>
<td>7</td>
<td>19</td>
<td>43</td>
</tr>
<tr>
<td><strong>S-CHA</strong> (Characteristics)</td>
<td>1</td>
<td>2</td>
<td></td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>S-CHO</strong> (Choice)</td>
<td>3</td>
<td>6</td>
<td>4</td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td><strong>S-CIR</strong> (Circle)</td>
<td>7</td>
<td>6</td>
<td>6</td>
<td>3</td>
<td>22</td>
</tr>
<tr>
<td><strong>S-F</strong> (Faculty)</td>
<td>5</td>
<td>8</td>
<td>5</td>
<td>11</td>
<td>29</td>
</tr>
<tr>
<td><strong>S-G</strong> (Grades)</td>
<td>4</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>6</td>
</tr>
<tr>
<td><strong>S-I</strong> (Instructional Strategies)</td>
<td>17</td>
<td>9</td>
<td>8</td>
<td>12</td>
<td>46</td>
</tr>
<tr>
<td><strong>S-M</strong> (Materials)</td>
<td>6</td>
<td>3</td>
<td>2</td>
<td>3</td>
<td>14</td>
</tr>
<tr>
<td><strong>S-S</strong> (Schedule)</td>
<td>1</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>5</td>
</tr>
<tr>
<td><strong>S-TS</strong> (Trips/Speakers)</td>
<td>1</td>
<td>4</td>
<td>1</td>
<td>6</td>
<td></td>
</tr>
<tr>
<td><strong>S-V</strong> (Variety)</td>
<td>1</td>
<td></td>
<td>2</td>
<td>3</td>
<td></td>
</tr>
<tr>
<td><strong>B-(Benefits)</strong></td>
<td></td>
<td></td>
<td></td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td><strong>B-HS</strong> (compared to high school)</td>
<td>8</td>
<td>20</td>
<td>7</td>
<td>12</td>
<td>47</td>
</tr>
<tr>
<td><strong>B-P</strong> (Benefits of Peers)</td>
<td>5</td>
<td>4</td>
<td>1</td>
<td>7</td>
<td>17</td>
</tr>
<tr>
<td><strong>B-I</strong> (Benefits of Area I)</td>
<td>4</td>
<td>1</td>
<td></td>
<td>5</td>
<td></td>
</tr>
<tr>
<td><strong>B-II</strong> (Benefits of Area II)</td>
<td>2</td>
<td>1</td>
<td>1</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td><strong>B-III</strong> (Benefits of Area III)</td>
<td>1</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>7</td>
</tr>
<tr>
<td><strong>B-U</strong> (Benefit, self understanding)</td>
<td>7</td>
<td>5</td>
<td>8</td>
<td>7</td>
<td>27</td>
</tr>
<tr>
<td><strong>B-C</strong> (Benefits related to careers)</td>
<td>4</td>
<td>9</td>
<td></td>
<td>7</td>
<td>20</td>
</tr>
<tr>
<td><strong>B-COL</strong> (Benefits related to college)</td>
<td>6</td>
<td></td>
<td>7</td>
<td>4</td>
<td>17</td>
</tr>
</tbody>
</table>

Note: All codes with a frequency of 3 or greater are included in the tables.
# SCHEDULES OF GOVERNOR’S SCHOOL EAST AND WEST CAMPUSES

Table I.1

Sample Schedule for Governor’s School East (North Carolina Department of Public Instruction (n.d)).

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>7:00 - 8:15</td>
<td>Breakfast</td>
</tr>
<tr>
<td>8:30 - 9:45</td>
<td>Area I Class (Monday – Saturday)</td>
</tr>
<tr>
<td>9:55 - 11:10</td>
<td>Area II Class: Section A (Monday, Wednesday, and Friday) and Section C (Tuesday, Thursday, and Saturday)</td>
</tr>
<tr>
<td></td>
<td>Area III Class: Section A (Monday, Wednesday, and Friday) and Section C (Tuesday, Thursday, and Saturday)</td>
</tr>
<tr>
<td>11:15 - 12:30</td>
<td>Area II Class: Section B (Monday, Wednesday, and Friday) and Section D (Tuesday, Thursday, and Saturday)</td>
</tr>
<tr>
<td></td>
<td>Area III Class: Section B (Monday, Wednesday, and Friday) and Section D (Tuesday, Thursday, and Saturday)</td>
</tr>
<tr>
<td>11:30 - 1:15</td>
<td>Lunch</td>
</tr>
<tr>
<td>1:30 - 2:45</td>
<td>Area I Class (Monday – Friday) Electives and Recreation Activities (Saturday)</td>
</tr>
<tr>
<td>3:00 - 4:30</td>
<td>Electives Student Organizations: Summerbook or Newspaper Meetings Recreation: Tennis and Swimming</td>
</tr>
<tr>
<td>4:30 - 6:00</td>
<td>Dinner</td>
</tr>
<tr>
<td>6:00 - 9:00</td>
<td>Electives or School-wide Speakers Recreation: Basketball, Volleyball, and Table Tennis</td>
</tr>
<tr>
<td>9:00 - 10:00</td>
<td>Social Activity</td>
</tr>
<tr>
<td>10:00</td>
<td>Curfew</td>
</tr>
<tr>
<td>11:00</td>
<td>Lights Out</td>
</tr>
</tbody>
</table>
Table I.2

*Sample Schedule for Governor’s School West* *(North Carolina Department of Public Instruction (n.d.))*

<table>
<thead>
<tr>
<th>TIME</th>
<th>ACTIVITY</th>
</tr>
</thead>
<tbody>
<tr>
<td>8:00 - 9:00</td>
<td>Breakfast</td>
</tr>
<tr>
<td>9:00 - 10:15</td>
<td>Area I Class (Monday – Saturday)</td>
</tr>
<tr>
<td>10:25 – 11:40</td>
<td>Area II Class (MWF)*</td>
</tr>
<tr>
<td></td>
<td>Area III Class (MWF)</td>
</tr>
<tr>
<td>11:50 – 1:05</td>
<td>Area II Class (MWF and TTS)</td>
</tr>
<tr>
<td></td>
<td>Area III Class (TTS)</td>
</tr>
<tr>
<td>12:00 – 1:45</td>
<td>Lunch</td>
</tr>
<tr>
<td>2:00 – 3:15</td>
<td>Area I Class (Monday – Friday)**</td>
</tr>
<tr>
<td>3:30 – 5:00</td>
<td>Optional Seminars</td>
</tr>
<tr>
<td></td>
<td>Student Organizations: Annual or Newspaper Meetings</td>
</tr>
<tr>
<td></td>
<td>Recreation: Swimming, Volleyball, 3 Man Basketball</td>
</tr>
<tr>
<td>5:00 – 6:00</td>
<td>Dinner</td>
</tr>
<tr>
<td>6:00 – 7:00</td>
<td>Rehearsal (MWF)+</td>
</tr>
<tr>
<td>7:00 – 9:00</td>
<td>Optional Seminars or School-wide Speakers++</td>
</tr>
<tr>
<td></td>
<td>Recreation: Softball, Soccer, Tennis, Swimming</td>
</tr>
<tr>
<td>9:00 – 10:00</td>
<td>Social Activity</td>
</tr>
<tr>
<td>10:00</td>
<td>Curfew</td>
</tr>
<tr>
<td>11:00</td>
<td>Lights Out</td>
</tr>
</tbody>
</table>